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ABSTRACT

This volume organizes information on research and development in early childhood education. Goals and objectives of the 77 programs reviewed are described, and the strategies for implementing the programs are discussed. Organizational factors and the problems encountered in the programs and projects are considered. There is a short discussion of the conclusions and implications of the preceding. The volume consists of appendixes, which list programs of the National Laboratory on Early Childhood Education, Research and Development Centers, Regional Educational Laboratories, and Cooperative Research Projects. The goals and objectives of these programs and projects are listed, and taxonomy sheets are provided. Each program is summarized according to title, staff, goals, methods, and characteristics of the users. Also listed for each of the 77 programs are expected results, evaluation procedures, relationship to other center programs, and center focus. Time schedules and activities within each program are given. (DR)

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AN ANALYSIS OF EARLY CHILDHOOD EDUCATION RESEARCH AND DEVELOPMENT

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ABBREVIATIONS USED

Regional Educational Laboratories

AEL	Appalachia Educational Laboratory Charleston, West Virginia
CAREL	Central Atlantic Regional Educational Laboratory Washington, D. C.
CEMREL	Central Midwestern Regional Educational Laboratory St. Ann, Missouri
CUE	Center for Urban Education New York, New York
EDC	Education Development Center Newton, Massachusetts
FWLERD	Far West Laboratory for Educational Research and Development Berkeley, California
RELCV	Regional Education Laboratory for the Carolinas and Virginia Durham, North Carolina
SCREL	South Central Region Educational Laboratory Corporation Little Rock, Arkansas
SEDL	Southwest Educational Development Laboratory Austin, Texas
SEL	Southeastern Education Laboratory Hapeville, Georgia
SWCEL	Southwestern Cooperative Educational Laboratory Albuquerque, New Mexico

SWRL	**Southwest Regional Laboratory for Educational Research and Development** **Inglewood, California**
UMREL	**Upper Midwest Regional Educational Laboratory** **Minneapolis, Minnesota**

Research and Development Centers

Georgia	**Georgia Research and Development Center in Educational Stimulation** **Athens, Georgia**
Pittsburgh	**Pittsburgh Learning Research and Development Center** **Pittsburgh, Pennsylvania**

National Laboratory on Early Childhood Education

Arizona	**Arizona Center for Early Childhood Education** **Tucson, Arizona**
Chicago	**Chicago Early Education Research Center** **Chicago, Illinois**
Cornell	**Cornell Research Program in Early Childhood Education** **Ithaca, New York**
Kansas	**Kansas Center for Research in Early Childhood Education** **Lawrence, Kansas**
Peabody	**Peabody Demonstration and Research Center for Early Education** **Nashville, Tennessee**

Syracuse	Syracuse Center for Research and Development in Early Childhood Education Syracuse, New York

INTRODUCTION

The field of early childhood education research and development is a very new field. Early childhood as defined in this paper refers to the period from birth through eight years of age. Public interest and support for activities in this area have been available in any large amounts only during approximately the past five years. Prior to that time early childhood education was an adjunct to programs with other missions of major interest to the country. For example, in programs which were implemented as a result of the Lanham Act early childhood education was seen as an adjunctive component to another more basic purpose. Day care centers were set up to permit mothers to work in factories and other war efforts. Even when education has been the prime focus, the early childhood component was still seen as an adjunct as when added to a larger general education bill.

The research work which provides the data base for program development had its beginnings as far back as the 1930's with the work of Skeels and Dye (1939) and Skodak (1939) and their demonstration of the dramatic effects of intervention. Special educators' concerns for more efficacious ways of dealing with their students also stimulated a core of research concerning early intervention with these specialized populations as perhaps most notably seen in the works of Kirk (1958). The landmark studies of Gray and Klaus (1965), Weikert (1967), Deutsch (1965) and others mark the advent of early childhood education into the national social conscience. Certainly these projects played a major role in initiating the current upsurge of effort in early childhood education.

The Zeitgeist must be said to have played its role, however, as almost before the first data had been obtained from these research projects the Head Start effort was launched. The public clutched at Head Start as a potential panacea for its concerns about the nation's poor. The extreme eagerness with which "answers" were sought was evidenced by the fact that the bill was passed in the spring and the first programs were implemented in the summer of the same year with virtually no time for any planning, long range or otherwise, to take place in order to launch such a massive endeavor.

Another factor which may have played a primary role in the lack of systematic planning in the field of early childhood education was the ready availability of support during the Johnson administration for implementation of innovative programs. There was a frantic scurrying around to produce programs that would be "innovative" in order to qualify for this suddenly available support. There was no time to develop systematic long range plans, to review even the scarce literature which existed or to prepare on even a logically sound basis if not a theoretically sound one. The available money was for program implementation. In essence, what this country wittnessed was a mess of pottage born out of panic.

As the dust settled during the next two years, the concern came rather quickly to focus on the outcomes actually obtained from these programs. As always happens, accountability was called for in regard to the public monies spent. The "Federal clock", which operates on this same two year span, also chimed as re-election neared and officials were called upon to show what results had been achieved during their tenure. As a result perhaps permature evaluation occured. Since the initial input was on what can only be described as a random basis expectation of any systematic outcomes hardly seems realistic. Proliferation of these "innovative educational programs" also, however, stimulated a series of research and development efforts designed to provide an increased knowledge base for the development of these programs. Perhaps because they were created at least partially in response to a specific need, the research and development programs tended to become very quickly concerned with the product orientation. Program descriptions and grant proposals were swamped with words and phrases intended to prove that things would be forthcoming from these programs. The research and development people had also been forwarned by the perhaps premature evaluation of Head Start and were determined not to be caught without tangibles with which to demonstrate their efficacy. The push for products was on.

Only out of these prior two phases has the urgent need for coherent systematic planning come about. When programs were pushed to produce a given product at the end of a stated period of time the need for developing a systematic plan became critical. Only as research and development people began facing production deadlines did planning become not just a nice little adjunct to work in progress but a mandatory percursor to direct the work and sequence it. As funding in order to launch the war on poverty began to level off, the need increased for coordinated and systematic attacks on the problems facing the field of early childhood education.

The current federal administration has repeatedly voiced a national committment to early childhood education. If this national committment is to become a reality it must have national direction. With the finite resources available to the Office of Education and, therefore, to the programs which it supports this direction can only be achieved by coherent long range planning.

The process of effective planning is a series of sequential iterative steps. First, one must be able to state in clear, objective, unambiguous, preferably measureable terms the goals and objectives toward which the work is to be directed. Secondly, one must be able to assess what work has already been done or is in progress which is designed to meet these goals and objectives. Thirdly, one must state, as far as can be known, the steps involved which will lead to the achievement of the goals and objectives. And fourthly, one must set about the implementation of these steps through the inclusion of work already completed, a coherent systematic coordination of the programs already in progress and the initiation of new ones where gaps, needs, etc. become apparent.

The current study was an attempt to provide some data from which planning of the early childhood education research and development work funded by the Office of Education could be done. These same data could provide a baseline from which this work could be evaluated.

Not only is very little information available on early childhood education research and development programs but what information is available is in such a loosely organized and scattered form that it is very difficult if not impossible to draw any meaningful conclusions from it or to compare the various work in progress across programs. The first task of this review was, therefore, to attempt to bring some organization, however simplistic, to the information available. Previous attempts to do this resulted in simply lumping or grouping big globs of work which looked alike or had some apparent similarity. None had gone beyond this point. It is interesting to note that the same has been true over the years of the older field of general education research and development. This might almost be said to serve as a warning sign post to the field of early childhood education research and development that some coherent systematic planning beyond the lumping or grouping stage is neccessary if any organized national effort is to emerge to give national direction to the field.

Since goals and objectives play such an important and crucial role in the analysis of the remainder of the data these were broken out for a separate and primary analysis. Following this the work in progress was analyzed along several dimensions including type of attack on the program (i. e., research, development, etc.) content, populations, delivery systems, etc. Inferences could then be made concerning the major trends in research and development efforts across programs, areas which were unique to specific programs and noticable gaps in the field as a whole. Another section which was felt to be of major concern we have called organizational factors. This includes information about the way in which the various organizations are set up to get their work done. In many cases no information was available here. We have, however, attempted to take a look at what was available and to make some inferences on this basis. Lastly, we have attempted to summarize the foregoing sections, draw some conclusions, suggest some implications and generally reflect on the data.

So that the reader can better understand the analyses which follow, a brief description is given here of the actual procedures used in this analysis. The following programs of the Bureau of Research of the Office of Education were reviewed in order to establish the initial data base: 1) the National Laboratory on Early Childhood Education, 2) the Research and Development Centers, 3) the Regional Educational Laboratories, 4) regular Cooperative Research Projects funded at above $10,000 for FY '69.

A list was generated through review of literature, interview of Bureau of Research project officers in the Office of Education, etc. of all Regional Educational Laboratories, Research and Development Centers and Cooperative Research Projects which had early childhood components and the six component centers of the National Laboratory. (See Appendices 1, 2, 3 and 4 for these lists.)

First, all of the major program documents (i.e., Basic Program Plans, Contractor's Request, Annual Report, etc.) of the programs and projects included were reviewed in an attempt to obtain a description of the early childhood education components. In some cases this presented a major problem in that the language of those documents was so obtuse and abstract as to totally obscure the actual work in progress. In many others it was necessary to first rewrite the information available into another form in order to permit any comparability across programs whatsoever. Second, visitations were made to all of the National Laboratory component centers, the Regional Labs and Research and Development Centers included in the analysis and as many of the projects as was possible given the resources available. Thirdly, the data were analyzed by a series of categorization systems using both BR taxonomy categories and others as will become apparent when discussing the various subsections of this paper.

GOALS AND OBJECTIVES OF PROGRAMS AND PROJECTS

The terms goals and objectives as used in this paper refer to the long-range, specific outcome of the reviewed research and development. Specifically, what is each program or project trying to accomplish? In many cases, the specific, observable, measurable goals were not stated clearly in the available documents. In these cases what was given was a global statement of the overall purpose or mission of the laboratory or program. When this occurred, an attempt was made to infer goals from described activities or to restate the purpose in more objective terms.

Goals and objectives of the 77 programs and projects reviewed fell into five major categories:

I. Curriculum Research and Development:

This category includes those programs and projects whose goal was the design, development and evaluation of educational intervention packages. In most instances end products of materials, guidelines, manuals or some other teaching aid were involved. In each instance, a new practice, technique, or product was involved.

II. Development of Knowledge Base for Early Childhood Education:

This category was designated when the activities involved were of the basic research variety and had as a main purpose the production of a data-based body of knowledge upon which future practices in Early Childhood Education could be based. This goal category was further divided into two subcategories:

A. Individual Characteristics:

This subcategory was used when the primary objective of the research involved was a delineation of the parameters of the influence of an individual or personal variable upon a performance outcome.

B. Environmental Influences:

This subcategory included those objectives whose primary focus was the explication of the influence of the human or object environment upon an individual.

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III. Delivery Systems:

This category included those programs whose major goal was the development of an innovative method of conveying or delivering new educational programs. The category included both the development and evaluation of roles for educational change agents and development of new technologies for delivering educational materials, such as educational TV and various autotelic devices. In most cases, a secondary objective included the explication of training technique and the development of supporting materials, etc., was involved.

IV. Development of Evaluation Techniques and Supporting Technology:

This category was used when the effort had as its objective the design, development and testing of instruments, and analysis models or evaluation strategies.

V. Other:

This category included unique programs or projects whose goals and objectives did not fit into any of the previously delineated categories.

It was very informative to review the number and kind of programs and projects whose goals and objectives fell into the above categories. The programs described under each heading are illustrative rather than comprehensive. For a complete categorization of all programs and projects reviewed refer to Appendix 5.

Curriculum Research and Development

By far, the largest number of programs and projects (44) fell into the Curriculum Research and Development Category. Five of the six components centers of the National Laboratory on Early Childhood Education stated as one of their specific objectives the development of a curriculum for young children. In addition five Cooperative Research Projects and 24 programs within the Regional Laboratories are focused on curriculum development. Four organizations, the Georgia Research and Development Center, the Primary Education Project of the Pittsburgh Learning Research and Development Center, and the Arizona and Peabody components of the National Laboratory, have as their goal the development of a total curriculum for young children. In other curricula there appear to be major emphases on the teaching of English as a second language, especially to Mexican American and Indian children. These curricula are exemplified by the language based curriculum of the Arizona Component of the National Laboratory developed primarily for Mexican Americans, the Oral Language Program at SWCEL which focuses on Indians of the Southwest, as well as Mexican Americans, and SEDL's Good Samaritan Center Curriculum whose goal is to make functioning bilinguals of Mexican American children by school entrance age. Two other programs emphasize the teaching of standard English to speakers of non-standard dialects--AEL's Appalachia Focused Language Component and SEL's Communication Skills program for speakers of non-standard dialects in the Southeastern States. A heavy language development emphasis is evident in curricula being developed at the Cornell, Syracuse, and Peabody National Laboratory Components, at SWRL in California, and in the Dunlap project and the UCLA project.

Although reading instruction is included in several of the language-based curricula it is the major focus in only two programs--CUE's Early Reading Experiment and SWCEL's Read Explorations. Arts and humanities curricula were developed during part of 1968-69 in two locations, CAREL and CEMREL. CAREL's program has since been phased out, leaving CEMREL as a unique program with the goal of developing curricula in aesthetic education, specifically in sub-areas of visual arts, music, dance, literature, and theater for grades K-12. Another unique curriculum was SEL's Interpersonal Relations component which apparently had as its goal the development of skills as getting along with others, knowledge of self, etc., but has since been phased out. A third unique curriculum project is CUE's Instructional Profiles which provides step-by-step how-to-do-it instructions for first year teachers in 3rd grade.

Knowledge Base Development

Those programs which were categorized as having goals related to the development of knowledge base for early childhood education concentrated on both individual learner characteristics and environmental influences. Categorized under the Individual Characteristics subcategory were studies such as Peabody's Individual Characteristics program whose purpose is to increase understanding of the development of cognitive and social functioning of young children through studies of concept development, cognitive style, and character development, specifically resistance to temptation and persistence. Chicago's Studies of Children's Language and Cognitive Development and Studies in Moral Judgment and Cognitive Stages are further examples of activities categorized under Individual Characteristics.

Arizona's Basic Learning Processes was cross-categorized under both Individual Characteristics and Environmental Influences in as much as its goal is to identify factors in the environments of children which control the acquisition and performance of academically related behaviors. Particular attention is paid to such individual characteristics as perceptual processes and other behaviors which affect academic performance such as attention, retention, perceptual speed, discrimination, hand-eye coordination, etc. Environmental factors studied include reinforcement functions and the stimulus control factors often recognized in motivational and perceptual processes.

Environmental Influences programs included Kansas' Study of the Ecological Reinforcers of the Preschool Environment which focuses on the inherently reinforcing qualities of preschool materials themselves for maintaining and guiding a child's play or construction with them. A number of other studies in this category focused upon the environments of culturally disadvantaged children. Among these are Peabody's Ecological Studies whose goal is to describe the impact of the social environment on three-year-old children in three groups, Urban Low Income, Rural Low Income, and Urban Upper Income homes, placing particular emphasis on the input to the child from the mother. The Helen Gouldner project has as its purpose the description of the learning experiences of the child in his home, school and peer cultures over a three year period.

Programs categorized under the Knowledge Base category were the most widely varied of any of the categories, ranging from a measure of spontaneous speech vocabularies of young culturally disadvantaged children (Kansas) to cross cultural studies of achievement motivation (Chicago). Most of these programs were being conducted by component centers of the National Laboratory or as Cooperative Research Projects with the exception of CEMREL's Early Developmental Adversity Project which studies the effects of pre-, peri-, and post-natal insult on the development of infants and SWCEL's study of Sociocultural Factors which focuses on particular characteristics of Southwestern populations as they might affect educational achievement.

Delivery Systems

Under the Delivery Systems category we find those programs whose goal is to develop and evaluate particular personnel or methods for presenting educational innovations. Included in this category are programs such as Arizona'a Development and Analysis of New Instructional and Ancillary Personnel Roles which focuses on the use of new classroom personnel, parents and classroom consultants. The goal is to translate research findings into a form which can be effectively used by these resource personnel for fulfilling influential roles which they are assummed to have in instructional processes. Peabody has a series of studies focusing on the training of mothers to work with their own children and to serve as trainers of other mothers for the same purpose. They are also concerned with the Training of Trainers of Classroom Aides. Chicago has a program entitled Studies of Planned Change and Communication in School Systems whose goal is to describe, develop, and pilot test a new role, that of social psychological specialist, to facilitate planned change and communication in school systems. The Pittsburgh Primary Education Project must also be cross-categorized under this heading since a major goal of this project along with curriculum development is the concomitant development of methods and techniques for the presentation of the curriculum.

Programs described thus far under delivery systems concentrate on educational change agent roles for personnel, but there are others whose objectives focus on the development and evaluation of new techniques or new media for presentation. For example, the Children's Television Workshop (CTW) aims to present an educational program to young disadvantaged children in their own homes across the country via television. AEL is presenting its preschool program for Appalachian children ages 3-5 via television. Far West's educational program for children ages 3-9 is based upon the use of autotelic responsive environments. An autotelic activity is a self-rewarding activity with no rewards or punishments that are not a part of the activity itself; such devices as the talking typewriter are in use in this program. SEL's Readimobile project uses a traveling van to provide educational programs to children in isolated areas. Most of the aforementioned projects and programs are also concerned with curriculum development but seemed to differ from those whose primary concern is curriculum in their emphasis on method of presentation or delivery of that curriculum.

Evaluation Techniques and Supporting Technology

The category labeled Development of Evaluation Techniques and Supporting Technology is primarily a research methodology category. Two National Laboratory component centers are concerned specifically with the methodology of longitudinal research. Projects at both Chicago and Syracuse have as their goals the development of new methodological procedures for longitudinal studies of young children including new data analysis techniques. One project at Peabody is concentrating upon the

the development of new assessment techniques which also could be used in longitudinal investigations.

Other

Finally we come to the category Other which includes several unique programs. SWRL's Computer Based Systems focuses on the use of the computer in three areas: 1) instructional management and administrative planning, 2) instructional product development and 3) mission oriented research. Computer programs have been devised which aid the administrator in planning for system-wide needs and for providing teachers with diagnostic and prescriptive information about children in their classrooms. Input-output devices in classrooms are linked, via telephone, to the computer in a nearby district or county office. Data banks may also be maintained for aid in developing instructional materials and for providing direction in research. A second program at SWRL, called Educational Research and Evaluation Procedures Compendium, is designed to accomplish a restricted set of objectives related to the training of educational research personnel to work in school and curriculum research.

Another program which deserves special mention here is the Day Care Component of SCREL. Although its primary focus was categorized as curriculum development, its emphasis on providing curriculum specifically to be used in day care centers was unique. In view of the new Federal Interagency Day Care Standards which call for "an educational component", this area of work assumes even more significance. Although SCREL has since been phased out the development work done in the Day Care Component may provide some helpful input into research and development work which will almost surely be necessary in order to effectively implement these new standards.

In summary, then, far and away the most popular goal of early childhood education research and development seemed to be curriculum development. Forty-four of the 77 programs and projects reviewed stated this as a major objective. Of this number only a very small percent (4 of 44) intended to develop total curricula. Most of the others had as a goal the development of several curricular components and a few had curriculum development for only one area as an objective. Most of the group attempting to develop several curricular components and all of those developing only one component chose to focus on language. Language was an overwhelmingly common emphasis across all programs studied.

Almost all of the curriculum components under development had a heavy cognitive emphasis. The theories of Piaget, Bruner and others have strongly affected the development of teaching materials and procedures in this country today. This major emphasis on cognitively oriented curriculum stems quite possibly from the Sputnik era and the push for academic excellence in America in our technologic race with Russia. In addition, much of the basic research under way had a strong cognitive orientation.

By contrast very little work was under way in the affective domain, Only one program had affective variables as a major single emphasis, the Interpersonal Relations Program at SEL, and this has since been phased out. One project, directed by Walter T. Plant, had development of attitudes as a major goal along with development of intellectual skills. The groups intending to develop total curricula included some affective aspects but in none of these did affective skills receive prime emphasis.

Goals and objectives in the curriculum development area seemed to be the most concrete, observable and best spelled out of any of the areas. This may reflect the nature of the area in that it is easier to specify "things" in this area. It may also reflect the pressing demand from the field for curricular "things" urgently needed in implementing the mushrooming programs for young children throughout the country.

It was taken as an encouraging sign that, in addition to emphasis on curriculum, some exploration of the system for delivering this curriculum was a major goal of some programs and projects. In view of the now well documented failure of the current system to provide an adequate education for all children this would certainly seem to be an area to continue to encourage and to increase support of in whatever ways possible.

Two common foci appeared across programs in regard to delivery systems. Many of the groups chose to give heavy if not chief emphasis to work with parents. This home focus was a primary objective in at least eight major Labs or centers. If educational intervention is to begin at younger and younger ages it seems very fitting indeed to begin exploring ways of obtaining maximum educational potential from those who have always had maximum socialization potential-parents.

A second major thrust in the delivery systems area was toward work with paraprofessionals. Although this was not as prevalent as work with parents, and more often took a secondary position relative to curriculum development, several groups did have as a major objective the development of roles for the training of personnel to serve as instructional assistants. In some cases, the goal of using a paraprofessional was to improve the existing educational system. In others the objective was to change the system by introducing this new role as a full partner with the teacher in the delivery of instruction.

As one might predict the goals and objectives for the generation of the knowledge base to support development work were, in most instances, clearly stated in measurable terms. Goals and objectives in this area were usually quite specific. Little effort seemed to be made, however, to relate them to either immediate or long term development needs. In many cases basic studies were being carried out which had considerable relevance for development work already in progress within the same or another center, but there appeared to be only vague awareness as to how such research and development might be coordinated. Appropriate input and feedback from these more basic research type activities, which on the whole were of excellent quality, was poorly spelled out if at all.

Objectives in the evaluation techniques and supporting technology category were usually fairly specific and well articulated in that they were often tied to some other piece of work in progress and their relevance and applicability were clear.

In general, most goals and objectives were of short or immediate range rather than long range. While this may be appropriate at the program or project level, there was little evidence that these had, in most cases, been related to a larger overall goal or that they had been thought through in terms of long range implications. Goals and objectives were also scattered over the field as a whole with no coherence or unifying whole to which each related. They seemed to be related more to idiosyncrasies of a particular program or investigator, than to any overall plan to move knowledge ahead in this field.

IMPLEMENTATION STRATEGIES OF PROGRAMS AND PROJECTS

Once the goals and objectives of the various programs and projects had been categorized, it proved instructive to study the techniques and methods which the various organizations chose for implementing their goals and objectives. In this respect more data were available and it seemed much easier to make a judgment concerning the work actually in progress. For this purpose, some of the Bureau of Research Taxonomy categories proved helpful. Since the dollar values of the programs had been obtained it seemed appropriate to analyze this section in terms of percent of Bureau of Research early childhood money spent in FY '69 for the various subcategories.

General class of activity was the first category studied and the results are presented in Table 1. As can be seen from this table far and away the lion's share of monies is being spent for development activities (66%). Some 21% of the Bureau of Research early childhood education monies was allocated in FY '69 for research activities, 16% going for applied, development-related research and only five percent being spent for studies of the basic research variety which provides the knowledge background upon which development work is based. Three percent of the monies spent was invested in evaluation studies with some eight percent being spent for management, administration, coordination, and other not otherwise classifiable types of activities.

The relative amounts of money being spent for the various classes of activities provide some provocative speculations. The large amount of money being spent for development activities may reflect the particular sample which was chosen for study and the relatively heavy investment in the Regional Laboratories whose primary mission is development of educational materials and techniques. This ratio may also reflect the urgent need being felt in the field of early childhood education generally at the present time to produce materials for the teaching of young children in the many hundreds of programs springing up all over the country. This seems to suggest that the major goal of the Bureau of Research whether implicit or explicit in regard to early childhood education is to develop products and produce materials.

The relatively small percent of money being spent for basic research suggests several possibilities. One might assume, given such a situation, that a large body of data already exists upon which programs can be built. Since even the most cursory review of literature

Table 1

General Class of Activity

	Category G	Monies Allocated	Percentage Allocated
00	Bureau of Research program planning, evaluation, or related activity	$ 62,000	.67
01	Research	489,567	5.36
02	Development related research	1,430,456	15.68
03	Development	6,031,477	66.13
10	Evaluation	281,900	3.09
20	Demonstration	60,000	.65
30	Dissemination	------	-----
40	Training	75,000	.82
50	Support for facilities and equipment	------	-----
60	Other	689,000	7.55

reveals that this is not the case, one must turn elsewhere for answers to this question. A second possibility may be that the push for products has become so great and the need in the field for materials so urgent that they are being produced without adequate data foudations. A third possibility may be related to the disproportionate cost increases associated with development work. As development gets going its costs increase geometrically. With funding increases not matching these ratios, the extra has to be taken out somewhere and the more basic research is cut or else the development doesn't come to fruition and the investment is lost. A fourth possibility, of course, and one which may actually be more reality oriented, given the organizations studied and the categorization system used, is that much basic research is being carried out under the guise of development-related research and the actual differentiation here is a semantic one.

With educational experiences beginning at younger and younger ages work in progress in the organizations studied was reviewed by the major categories of age levels toward which this work is directed. Prior to the current upsurge of interest in early childhood education only a few selected groups of children attended kindergarten in the United States. Now one might almost say that kindergarten is the rule rather than the exception for most children. One state, New York, has already authorized programs for four-year-olds as part of their regular public school system. A great many experiemental and/or short term programs are under way for three-year-olds.

Age of target population toward which the research and development work is directed reflects some very encouraging trends as seen in Table 2. The largest amount of money being spent on any one single category (24%) is directed toward the primary school ages (through grade 3). This may very well be appropriate in that this is the first period of time where the child's attendance in an educational setting is legally mandatory. If indeed the current educational system has, as many people believe, failed miserably at educating children perhaps it may be considered appropriate to attempt new and different attacks on educational problems at this age level. Further activities in this area may be expected to come in the category entitled "elementary and secondary not further specified" in which approximately 19% of Bureau of Research early childhood education monies was allocated, and the category labeled "elementary" in which 8% of monies was expanded. It is further encouraging, however, that the second largest amount of money being spent (23%) is directed toward the three to five-year-old. If we are lowering the age of school admission at such

Table 2

Developmental or Educational Level of Ultimate Target Group

	Category I	Monies Allocated	Percentage Allocated
00	Not applicable	- - -	- - -
01	All level and ages	$ 32,000	.35
10	Early childhood or preschool, not further specified	1,461,315	16.02
11	Prenatal	- - -	- - -
12	0 through 2 1/2	135,869	1.48
13	3 years through 5 (or nursery school)	2,100,341	23.03
14	5 through 6 (kindergarten)	759,128	8.32
20	Elementary and Secondary, not further specified	1,696,059	18.59
21	Elementary, not further specified	720,000	7.89
22	Primary (through Grade 3)	2,214,688	24.28
23	Later elementary (Grades 4-6)	- - -	- - -
24	Intermediate or middle school (up to secondary)	- - -	- - -
-			
-			
-			

a rapid rate, it is more than appropriate that we begin research and development activities now to provide adequate information upon which to build programs at this age level in the near future. Eight percent of the monies allocated was directed specifically toward kindergarten age children (5-6 years).

Only 1.48% of early childhood education research and development monies is as yet being directed toward infants. As the age of educational intervention focus decreases it is expected that this amount must be increased if an adequate base is to be provided for work with these very young children. Sixteen percent of the monies spent was on programs whose activities were thought to be applicable to children of all age levels.

These data suggest some interesting inferences. The first is that the information given is not specific enough to draw any inferences in regard to age level. The second is that the work in progress may have grown out of demands and pressures being placed at the moment rather than any systematic planning and preparation over a long period of time with specific phasing of the work in regard to age levels.

A concern which has been heavy on the social conscience of the United States during the recent years is the quality of educational experiences for various minority groups. The ethnic, racial, or cultural character of the population toward which the research and development work in early childhood education is being directed provided some information here. Sixteen percent of monies allocated was for work with various minority groups. Approximately 2.5% of monies allocated was for work with Mexican-American children, while only 1% was indicated as being allocated directly for work with Negro children. When the raw data were reviewed, however, it was noted that many of the studies with Negro children were included in the category "minority groups, not further specified." Almost 8% of monies spent was directed toward specific minority groups not classified under this system. Examples here might include Appalachian poor children, children of migrant workers, etc. It is interesting to note that 71% of the programs appeared to be directed toward the general population as their ultimate target group. This may suggest that the general education process in this country at this time is directed toward the general rather than the specific. Since all children are to be educated, according to public law, the system may be making an attempt to do just that. Another more interesting possibility, however, is that the basic process of learning is more similar across all human beings than it is different. This may

Table 3

Ethnic, Racial, Cultural (or Religious) Character of Ultimate Target Group

	Category J	Monies Allocated	Percentage Allocated
00	Not applicable	$ 62,000	.67
01	General population	6,461,451	70.85
10	Minority groups, not further specified	1,498,321	16.43
11	Negro	82,000	.89
12	All Spanish surname, not further specified	- - -	- - -
13	Mexican-American	233,191	2.55
14	Puerto Rican	- - -	- - -
15	Cuban	- - -	- - -
16	French-American	- - -	- - -
17	Indian	- - -	- - -
18	Oriental	- - -	- - -
19	Other specific minorities (including religious groups)	695,568	7.62
20	White majority	20,000	.21
30	Cross-cultural study	66,869	.73

further suggest that what is needed is more study of the process of learning per se than of its peculiar ramifications in particular situations. As we come to understand how a human being learns it may be that we will be able to be more efficient with all human beings. It may very well be that we approach this study of learning process through specifics such as differences in various racial, cultural and ethnic groups but the primary focus on the learning processes per se needs to be more clearly spelled out.

A major crisis facing this country today is the urban crisis - the problem of what to do about the new and different problems arising from living in cities. Is early childhood education research and development taking account of some of these problems? Apparently so as seen by the data presented in Table 4. Some 10% of monies expended is directed toward urban populations, with 8% of these being specified for central city children as such. It is not known what further work may also have major applicability to urban children as indicated in the 86% being directed toward both urban and rural children. The rural segment of the population is apparently not be neglected, however, as seen by the 4% of monies being invested in this direction.

Another national concern having an impact upon program development has been in regard to the nation's poor (the so-called culturally deprived). This particular concern has perhaps affected educational research and development work more than any other single category in terms of proportionate monies spent. As seen in Table 5, some 13% of Bureau of Research early childhood education monies in FY '69 were allocated for the research and development of materials, methods, and techniques designed specifically for culturally deprived children. This concern with persons that have not had opportunities to obtain the experiences of the majority of the dominant main stream of the United States culture is further reflected in the some 6% of monies being spent to develop educational materials specifically for foreign language speaking children.

Other specific but non-classifiable special groups received some 8% of monies allocated. Again the very large percentage of money spent on early childhood education research and development directed toward the general population (72%) may also reflect the basic similarity between human beings rather than basic differences.

With large amounts of public monies being spent on educational research and development one wonders when we may expect some pay off or some actual feedback into the educational system from this work.

Table 4

Demographic Area of Ultimate Target Group

	Category K	Monies Allocated	Percentage Allocated
00	Not applicable (or includes all areas)	$ 7,834,095	85.90
10	Urban, not further specified	733,028	8.02
11	Central City	186,709	2.04
12	Suburban	- - -	- - -
20	Rural, not further specified	60,000	.65
21	Farm	- - -	- - -
22	Non-farm	305,568	3.35

Table 5

Special Characteristics of Ultimate Target Group

	Category L	Monies Allocated	Percentage Allocated
00	Not applicable	- - -	- - -
01	General population	$ 6,575,149	72.10
02	Intellectually gifted	- - -	- - -
10	Physically handicapped, not further specified	- - -	- - -
11	Vision	- - -	- - -
12	Speech	- - -	- - -
13	Hearing	- - -	- - -
14	Spastics and similar neurological problems	- - -	- - -
15	Crippled	- - -	- - -
16	Other physically handicapped	- - -	- - -
20	Intellectually handicapped, not further specified	113,113	1.24
21	Culturally deprived (socio-economically disadvantaged)	1,152,157	12.63
22	"Trainable" retarded	- - -	- - -
23	"Educable" retarded	- - -	- - -
24	Slow learners	- - -	- - -
25	Brain damaged	50,869	.55

Table 5 (con't)

Special Characteristics of Ultimate Target Group

	Category L	Monies Allocated	Percentage Allocated
30	Emotionally disturbed	- - -	- - -
31	Drug users or addicts	- - -	- - -
32	Alcoholics or problem drinkers	- - -	- - -
33	Tobacco users	- - -	- - -
34	Underachievers	- - -	- - -
35	Truants and dropouts	- - -	- - -
36	Delinquents and potential delinquents	- - -	- - -
37	Migrants	$ 26,838	.29
38	Refugees	- - -	- - -
39	Unemployed or underemployed	- - -	- - -
40	Foreign language speakers	505,806	5.54
41	Other special groups not codable above	695,568	7.62

One category which was helpful in attempting to answer this question was the level of user at which the work was directed. What group is expected to use the products coming out of the various programs and projects reviewed? Once again these data, as seen in Table 6, reflect the social conscience of the times. There has been increasing concern with the removal of "esoterica" and the installation of concrete, down to earth, "real" information. Some very genuine attempt seems to have been made to do this in that 46% of the monies spent was for programs whose materials were to be directed toward general instructional staff. These are the on line people who actually work with children in classrooms. Some further reflection on this may be seen in the 15% of monies being spent for activities of direct use to both professional and non-professional persons. When examining the raw data it was found that many of these activities included curricula and/or other materials and techniques to be used by both teachers and teacher aids or paraprofessionals. These again are materials and techniques to be made available for immediate and practical application in early childhood educational programs. A core of work is also being maintained, however, upon which to base continued development, as seen by the 14% of activities directed toward research and development staff. This information is consistent with the previously reported data on amounts of development related research on-going in the organizations studied. Various other groups came in for their share of attention as users of the research and development products. Both educators and non-educators received some 9% and combined groups of educators 6%. It is taken as a very encouraging sign that 7% of monies allocated was being spent for activities which had as their primary user administrative staff. It is almost too old a cliche to mention that effective and adequate programs cannot be implemented without effective and adequate leadership. Therefore this focus on administrative staff seems particularly appropriate. It is somewhat disheartening, however, to note that this trend has not as yet reached the training level. Less than 1% of monies spent were being directed toward trainers of educational personnel such as college and university facilities. This information might provide a red flag to suggest that more monies need to be invested at one of the beginning points of the educative process.

It is encouraging to note that with the great majority of program goals and objectives being in the curriculum area the majority of the implementation strategies are also in the curriculum area as seen in Table 7. Some 51% of monies expended fell into this category. It is

Table 6

Character of Instrumental or Immediate Target Group

	Category M	Monies Allocated	Percentage Allocated
00	Not applicable	- - -	- - -
01	Professional education personnel	- - -	- - -
02	Professional and non-professional personnel	$ 1,366,505	14.98
03	Subprofessional or para-professional education staff	- - -	- - -
04	Education specialists outside schools	- - -	- - -
05	State Education Department personnel	- - -	- - -
06	School board members	- - -	- - -
07	Combined educator and non-educators	806,591	8.84
08	Combined groups of educators	554,153	6.07
10	Instructional staff, not further specified	4,237,975	46.47
11	Pre-service teachers	- - -	- - -
12	Inservice teachers	171,000	1.87
13	Other	- - -	- - -
20	Supporting staff	- - -	- - -
30	Administrative staff	625,000	6.85

Table 6 (con't)

Character of Instrumental or Immediate Target Group

	Category M	Monies Allocated	Percentage Allocated
40	Trainers of teachers or other education personnel	$ 52,000	.57
50	Research, development or evaluation personnel	1,149,876	12.60
51	Research specialists	28,000	.30
52	Developmental specialists	128,000	1.40
53	Evaluation specialists	- - -	- - -
54	Other specific fields	- - -	- - -
60	Parents	- - -	- - -
70	General public	- - -	- - -

Table 7

Topical Area Code

	Category N	Monies Allocated	Percentage Allocated
00	Not applicable	$ 62,000	.67
01	Combination approach	234,148	2.56
03	Instructional facilities	- - -	- - -
04	Pupil personnel services	- - -	- - -
05	Other basic research not identified below	163,698	1.79
10	Educational trends, needs, and objectives	- - -	- - -
20	The school as an institution	- - -	- - -
21	Relationships of school with with community groups, public agencies, "world of work," etc.	- - -	- - -
22	Relationship of school with other school systems	- - -	- - -
23	Organization, administration and management of schools	625,000	6.85
24	Educational personnel as an objective study	147,000	1.61
30	Instructional Systems and Practices	469,113	5.14
31	Curriculum	4,790,945	52.53
32	Computer managed and/or assisted instruction	- - -	- - -

Table 7 (con't)

Topical Area Code

	Category N	Monies Allocated	Percentage Allocated
33	Individual learning systems	$ 97,000	1.06
34	ETV, ITV, Tele-Lecture, etc.	1,255,568	13.76
35	Ungraded systems	- - -	- - -
36	Self-directed study	- - -	- - -
37	Remediation	- - -	- - -
38	Other media	- - -	- - -
39	Other	16,000	.17
40	Social influences on students	44,000	.48
41	School or classroom	- - -	- - -
42	Family	66,000	.72
43	Peer groups	- - -	- - -
44	Community	- - -	- - -
45	Racial Integration	- - -	- - -
50	Individual Development and Learning Processes	886,928	9.72
51	Cognitive or intellectual functions	187,000	2.05
52	Affective or social domain	47,000	.51
53	Psychomotor skills or Physiological studies	- - -	- - -
54	Nutrition and Learning	- - -	- - -

Table 7 (con't)

Topical Area Code

Category N		Monies Allocated	Percentage Allocated
55	Bio-chemical studies of Learning or memory	- - -	- - -
60	Information Sciences not allocable to above categories	- - -	- - -
70	Other	$ 28,000	.30

also encouraging, however, that a healthy 10% of monies expended was devoted to the study of individual development and learning processes. It is presumed that this would be directed toward the establishment of a good data base upon which sound curricula could be built. It is further encouraging that another category receiving significant support was that of organization, administration, and management of schools which receive some 7%. This again supports the previously reported data suggesting that some attention is being paid to good leadership of the new and innovative approaches being developed. Instructional systems and practices which will support the installation of the various curricula are receiving some 5% of Bureau of Research early childhood education funds. One somewhat spurious bit of data reflected in this particular analysis is the disproportionately large percent of monies being spent on televised programs. This category reflects only two programs one of which, the Children's Television Workshop, is funded at a disproportionately high level in comparison to the other programs and projects reviewed. In view of the pervasiveness of this media of presentation on the American scene today it will be very interesting to follow this project as the efficacy data are forthcoming to begin to assess its potential for educational intervention.

With the large amounts of monies being spent to develop curricula it was instructive to look at the subject matter which these curricula addressed. Of those projects which were applicable (some 74%), by far the lion's share went to the development of curricula covering more than one major field. As seen in Table 8, some 28% of monies expended fell into this category. Nineteen percent of the curricula was directed toward reading activities. In view of the small number of projects which had as their goal or objective a reading focus, this reflects a high level of funding of these individual activities. Again, the relatively high proportion of monies spent on arts curriculum (some 9%) reflected the fact that one entire laboratory during FY '69 had arts as a focus. Language arts came in for its share at 4% and problem solving skills in young children at some 3%. Another very informative bit of data was the scant 5% being expended on bilingual curricula (including English as a 2nd Language curricula). In view of the relatively large number of projects which have as a major goal the development of bilingual curricula, what this may suggest is that the Bureau of Research is getting good mileage out of these projects for the monies expended. What it may also suggest, however, is that these programs may be spread too thin to expect any significant impact and that if this is to be a major goal more monies should be expended in this direction. Various other curricular areas came in for minor amounts of emphasis as seen in Table 8.

Table 8

Subject Matter Field

	Category O	Monies Allocated	Percentage Allocated
000	Not applicable	$ 2,355,626	25.83
	Basic Knowledge and Skills		
101	Program covering more than one major field	2,572,344	28.20
102	Problem solving	318,500	3.49
110	Language Arts	358,481	3.93
111	Bi-Lingual programs	107,559	1.17
112	English as a second language	319,932	3.50
113	Reading, composition, speaking, etc.	1,764,815	19.35
120	Foreign languages	- - -	- - -
121	The Arts	790,843	8.67
122	Mathematics	79,400	.87
123	Science	57,000	.62
124	Social Studies	93,700	1.02
130	Education for "effective living"	- - -	- - -
131	Health and safety education	55,200	.60
132	Sex education	- - -	- - -

Table 8 (con't)

Subject Matter Field

	Category O	Monies Allocated	Percentage Allocated
133	Driver education	- - -	- - -
134	Drug education	- - -	- - -
135	Other	- - -	- - -
140	Other fields under basic knowledge and skills	- - -	- - -
200s	General or "academic" Knowledge and Skills	- - -	- - -
	- - -		
300s	Occupationally Specialized Knowledge and Skills	- - -	- - -
	- - -		
400	Education Professions Curriculum Areas	- - -	- - -
403	Curriculum and Instruction	$ 171,000	1.87
500	Other areas not included in 100, 200, 300, or 400 series above	75,000	.82

Following a review of the relative amounts being spent in early childhood education for the various sub-areas, it proved informative to look at the early childhood education total relative to the total being spent by the Bureau of Research for all educational research and development. Total dollar amount spent by all programs and projects included in the current analysis in FY '69 was $9,119,400. The total Bureau of Research budget for FY '69 was $94,775,000. In other words, some 9% of available monies was spent on what has been stated as a high priority area. It seems an insult to the reader's intelligence to point out that an incongruity exists here. Obviously, if this stated high priority is to become a real one, serious planning must begin immediately to increase this amount.

ORGANIZATIONAL FACTORS IN PROGRAMS AND PROJECTS

The way in which a group of people are organized to do work is beginning to be understood as one of the crucial variables in whether or not that work does in fact get done. Organizational patterns of groups have been recorded through the interminable "organization chart" for many years. The significance of different types of organizations, however, has received systematic study only in recent years. This is a very complex and involved variable and no attempt will be made here to do it full justice. It is simply thought, in view of the importance of these factors, that some recognition should be given to it in organizations of the type reviewed in this study. A major problem in analyzing organizational factors of the groups studied was the complete lack of data concerning the processes actually occurring. In many cases no information whatsoever was available. In other cases the data were inadequate to determine the actual procedures for organization in the program, project, etc. Some factors did emerge, however, and are worth mentioning here.

An obvious and predictable factor was the tie-in between goals and objectives and work procedures. If a group or organization could specify in clear, objective, measurable, sensible and feasible terms their goals and objectives, there was a very high probability that they could also program themselves and their organization to achieve these objectives. There seemed, in fact, to be an almost direct relationship between the ability to do this and the ability to organize in successful patterns for achieving these goals and objectives. Two factors were apparent in analyzing these group skills. One was the group's ability to specify long range goals and objectives in these clear, objective, measurable, sensible and feasible terms and second was the ability to break these down into small achievable steps so that they could be effectively implemented, replanning where indicated. One outstanding example of a group which has been markedly able to do this is the Primary Education Project at Pittsburgh. Another group which shows that they have made continuous progress in this respect is the Southwest Regional Laboratory in Inglewood, California, although this group seems to have consistently had some difficulty in communicating these achievements. Several other groups show definite promise of having become involved in these skills and processes and are moving toward an organizational structure which is directly related to task accomplishment. These include the National Laboratory on Early Childhood Education, the Southwest Educational Development Laboratory, the Southwest Cooperative Educational Laboratory, the Appalachia Educational Laboratory, the Far West Regional Educational Laboratory, and the Georgia Research and Development Center.

Another variable which was studied to determine whether or not it affected the group's ability to do its work was centralized versus decentralized organization. This variable did not appear to be a major factor in the achievement of the group's goals and objectives. The pattern was very inconsistent with some highly productive groups being organized in a centralized manner and others being decentralized. The converse was true as well.

One factor which seemed to make a difference in organizational structure was whether or not the procedures and the decision making processes embodied in the work procedures were explicit and clearly spelled out or whether they were implicit and left to the imagination of the reader. A second factor which is known to be important to the success of an organizational structure is the variable of leadership. The social psychological literature has only begun to address this variable in the last few years as evidenced most notably perhaps in the work of Feidler. During the visits to the various organizations, the importance of the leadership variable was immediately apparent in the work of the organization. Certainly leadership style as well as quality varied greatly across the different programs. Although no systematic attempt was made to study leadership characteristics, subjective impressions would suggest that some attention to these factors would be profitable.

In general, then, only a few conclusions can be drawn from study of the organizational patterns of the various groups. The first is that this appears to be a major factor in the group's ability to achieve its goals and objectives and should receive systematic study. The second is that almost no data are available concerning this factor and procedures should be worked out for obtaining these data.

It is interesting to note that, where information was available and the organizational patterns were studied, the "programmaticness" of the organization seemed directly related to its productivity. Definitions of both programmatic and productivity are difficult to get agreement upon. By programmatic we mean the group's ability to articulate clear, objective, measurable, sensible, and feasible long range goals, their ability to break these down into a series of sequential smaller steps leading to intermediate goals and objectives and their ability to implement these plans and to replan where necessary. The definition of productivity is even more illusive and, of course, measures of either of these variables are as yet non-existent. There is enough exploratory evidence, however, to suggest that they are very important and that the relationship between the two should be investigated in a systematic fashion.

PROBLEMS ENCOUNTERED IN THE PROGRAMS AND PROJECTS, PROBLEMS ENCOUNTERED IN THE REVIEW AND REFLECTIONS

When all of the work which is funded by the Bureau of Research of the Office of Education in regard to early childhood education research and development is reviewed a major, persistent and recurring problem continues to be the establishment of goals and objectives. The predominant trend in early childhood education research and development work today is to use these two terms for specific, objective, measurable, outcome statements. Many laboratories and groups tended to confuse these with the much broader and less behaviorally worded purposes or missions of their organization and not enough specifics were given to judge what the group intended doing. In other cases, goals and objectives were highly specific, behaviorally worded and very measurable but they were of the small, one step variety and showed evidence of not having been well thought through and backed up by appropriate long-range goals and objectives. There was no evidence as to how they fit into any larger picture whether national, regional, or even local. In short, there was no coherent total organization of the work in progress.

A second recurring problem was that, although all of the organizations studied except the cooperative research projects, are presumably funded specifically from monies set aside to support a programmatic approach to research and development work, the fact is that these organizations are simply not programmatic. Firstly, they simply do not program their work in the sense of setting up a series of sequential steps leading up to a goal or objective and preceeding about these in an orderly, systematic way. Secondly, they do not program their work in regard to staff. In some cases the area of expertise as judged from training and previous experience of the principal investigator seemed to bear no relationship to the work in progress under his jurisdiction. These conclusions have been further supported elsewhere. (Scott & Miller, in press). Additionally, in other organizations staff utilization was poor. In some groups a very small staff was carrying what was obviously a heavy and perhaps impossible work overload. In others there appeared to be an overabundance of staff with difficulty in determining exactly what specific responsibilities each carried. Still a third area where the organizations reviewed failed to be programmatic was in their failure to utilize a dynamic approach as opposed to a static one in regard to planning. It is difficult to understand why some people cling to a concept of planning that is so outmoded as to not even warrant association with this century. Their actions indicate that they think of a plan as an ironclad pattern that once adopted must be followed to the bitter end regardless of any new information which becomes available. One almost conjurs up a mental image of the classic caricature of the little man with attire all awry in an obvious dither saying, "Don't confuse me with the facts." Good planning bears no resemblance to this sterotype of the ironclad pattern. It is instead a dynamic, iterative process - a verb, if you will, rather than a noun.

Evaluation was another section which was very difficult to deal with in this analysis. Evaluation plans were frequently not clear. In many cases they were not closely, if at all, tied to goals and objectives. There were, as previously reported, the many cases where goals and objectives were not measurable. There were other cases, however, where a detailed minute evaluation plan was laid out but it was not possible to tell what this evaluated. In other cases the questions which the program or project set out to answer were good ones and measurable ones but the evaluation strategies laid out to answer these were inappropriate.

In many cases the work in progress in the organization reviewed was too diffuse. Some organizations had not only related their work to a larger picture, but had taken the larger picture on as their goals and objectives and in view of their focus, their staff, and other resources this was obviously not a realistic possibility.

As previously mentioned there were not enough attempts to make work comparable or to relate it, in some cases, to anything else. Some programs and projects related well to others within the same center or laboratory and in a less specific way to others in their immediate periphery. Few, if any, however, made attempts to tie their work to others beyond this, even when the goals and objectives, the population studied, and the expected end products appeared to be the same as a project in progress someplace else.

A major problem in doing an analysis of this sort is the lack of comparability of data. At the simplest level there is no standardization of reporting procedures at all. Additionally, however, there did not seem to be any agreement on criteria for what to include in reports of work in the various organizations studied. A second, but related, problem is the unnecessarily obtuse and abstract language which many persons use in attempting to communicate what they are doing. While it is not suggested that any rigid format for reporting would be appropriate or that it would necessarily aid in the comparability of data problem, some attempt at systematization would greatly reduce the burden of attempting to establish an initial data base from which work could be viewed.

A concomitant problem was the lack of uniformity in budget reporting and costing procedures. In some cases it was impossible to tell how much a particular piece of work cost. This type of detailed fiscal thinking about the research and development programs is relatively new and it is recognized that criteria for the various costing procedures are not yet firmly established. These ratios are also admittedly a difficult thing to obtain. Some groups, however, had nice breakdowns of program costs, administrative costs, and relative ratios. Others had difficulty in arriving at consistent cost estimates for their laboratories as a whole, much less specific components.

Some procedures are badly needed to tie work to cost in a meaningful way. A caution seems in order here, however. While several of these types of systems already exist and should certainly be studied, it is not proposed that any of these necessarily be adopted en toto. A more appropriate tack might be to first analyze the particular needs of education research and development and develop a system appropriate to these needs.

Very limited attention was given to organizational procedures. In cases where some attempt was made to address this question, the details were largely management procedures and in almost no cases were true organizational mechanisms discussed or detailed. In view of the importance of these factors in programmatic research and development work. This proved to be a major handicap in assessing the organizations and their work.

CONCLUSIONS AND IMPLICATIONS

One major conclusion stands out as paramount following a review of all early childhood education research and development work funded by the Office of Education Bureau of Research. There are no clear, concise, well thought through, well spelled out national objectives to give direction to this work. The evidence available does not suggest that the Office of Education, through its Bureau of Research, has some terminal end point in mind in regard to early childhood education. National objectives have been under development in the field and there is some indication that the Bureau of Research wishes to endorse these as appropriate to a national focused effort in early childhood education research and development. Until these are clearly and explicitly spelled out and agreed upon at the policy level, however, any further analyses of work in progress become merely continued exercises in lumping or grouping look-alikes together. This boils down to a same-different discrimination problem which most children can handle well by the age of five. Work could, of course, be reviewed in isolation in light of its own goals and objectives in order to make some qualitative statements concerning it. It would seem futile, however, to attempt to assess work in progress toward national goals and objectives in early childhood education when in fact no national goals exist.

National goals and objectives seem to have come about with relative ease in some areas. The National Aeronautics and Space Administration Program and the Cancer Research Program, to mention two, have been notably successful in deriving goals and objectives and moving toward these in a planned, systematic fashion. Perhaps this has been so because there is much more concensus concerning the values underlying these two efforts. It is easy to get agreement on the need to alleviate pain and suffering or the need to maintain national prestige and technological excellence in the space race. It is much harder to get agreement on the needs of a young child in becoming "educated." This does not reduce the need to develop goals and objectives in education. It simply makes the task a bit harder. It is important to recognize here that the work currently under way was instigated on the basis of some values, although these may have been implicit and present only as assumptions in the mind of the funding agency and not explicit, or verbally stated or written down at all. One excellent example of an implicit value which is influencing current work is the increased value placed on logic and reasoning following the Sputnik events which is now evidenced in the strong cognitive emphasis of most curriculum development work.

There is ample evidence to show that this nation does value early childhood education. At the federal level representatives of the people have repeatedly voted funds to support early childhood programs. The current federal administration has named early childhood education as one of its priority programs. There is also increasing support at the state level for work with young children as evidenced by recent legislation in several states to lower the age of public school entrance. This evidence provides a clear mandate for the federal establishment to begin to develop resources directed toward the education of young children. Such resources would probably not involve wholesale endorsement of a single model but the development of a series of programs or models appropriate for use in a variety of situations.

The question may not be should we develop goals and objectives but, rather, how can these goals and objectives be developed as quickly as possible in order to take advantage of the momentum currently in existence in this new field of early childhood education research and development. Certainly any such objectives should be of comprehensive national scope. Time is also of the essence, however. As has been suggested elsewhere (Miller, 1969b) the field of early childhood education research and development stands at its critical period in regard to the development of initiative. If this initiative is not grasped soon it may be lost. It is not expected that a set of goals and objectives need be developed which this country could follow forever and anon, but that they represent the best evidence available and thinking about this evidence to date. The development of goals and objectives, like planning, could perhaps best follow a dynamic model rather than a static one.

Once such goals and objectives have been developed, then the evaluation of work in progress would become a relatively easy task. In the absence of such goals and objectives, however, one can only refer to inferred objectives which have been espoused, assumptions which have been made and the implicit decisions evidenced by the work in progress at the present time. For example, the very large portion of curriculum development work currently under way suggests that a major goal of the Office of Education is the production of things for program implementation in early childhood education. Furthermore, the strong cognitive emphasis of much of this curriculum development suggests that the Office of Education believes that training in intellectual processes is the best way to help a child arrive at some as yet unstated end point.

Once such goals and objectives had been established, several questions could be addressed toward some purpose. 1) Is it not about time to begin coordinating the vast amount of curriculum development which has been going on? 2) Following such a review and consideration of accomplishments to date, does more basic work need to be done in regard to processes underlying learning per se in order to support curriculum development? 3) Should curriculum development continue to occupy the major role as a strategy for educating young children or should other approaches be explored, such as an ecological management view toward arranging the child's learning environment? Several studies are already under way which suggest that this may be a more fruitful tack.

Another factor of chief concern which could be addressed once goals and objectives had been set up is the area of the content of the curriculum. With more and more of today's problems in living arising from increased population densities perhaps a child's greatest area of skill need lies not in cognitive areas but in affective and motivational ones.

A third area which could be considered once goals and objectives had been established is the appropriate delivery system for the educational process. Some very good ground work has been laid in this area by research and development work currently in progress and may very well need to be reviewed to determine where next steps lie.

Once these decisions have been made and a systematic plan outlined for moving toward the objectives, there is a great deal of work in progress throughout the country which could be fitted nicely into its proper perspective. Much coordination and some collaborations are a very real possibility. Language is a theme which runs as a common thread throughout many of the projects studied. It is also quite possible that several subsections would develop under this general heading of language. One obvious one here would be English as a second language. Another possibility is between various programs studying reading processes. This group, once coordinated, might also wish to coordinate its efforts with other groups studying reading processes, such as that currently under way in the basic studies unit of the Office of Education. With the vast amount of work which has been done and that is currently under way in reinforcement theory, techniques and strategies it may very well be appropriate at this time to assess the state of this art.

All of these coordinations would need to be predeeded by a systematic plan for doing so. Two first steps in the implementation of such a plan are apparent. Standardization of reporting procedures is necessary in order to provide for the routine collection of the data needed for coordination. Additionally, all investigators should be encouraged to consider in some depth the comparability of their work to others in progress and its applicability to whatever level is appropriate. Following this, then, appropriate coordination could be initiated in light of the previously established goals and objectives.

Several encouraging things emerged as a result of the review of the early childhood education research and development programs and projects. It is apparent that this new and enthusiastic group is very genuinely attempting to respond to the national social conscience. The large number of programs and projects under way to attempt to provide for some expressed or felt need is encouraging and gratifying. Much of this work, however, has a "put out the fire" quality and it lacks a broader scope of direction.

A great deal has been accomplished over the past three to five years in providing things for program implementation. As has been previously mentioned, this is especially true in the curriculum development area. A number of materials are now available to use with young children where as before the shelves were almost bare.

There is a great deal more work in the readiness stages and sound ground work is being laid to provide a data base for whatever next frontal wave might be undertaken in regard to work with young children, whether it be day care, work with parents, ecological management, or what have you.

Some gaps and holes still exist, however, which have been largely ignored thus far. These include predominately two major areas. One of these is the affective and motivational variable category. A few studies are in progress in regard to factors that would fall in this classification and these variables are given some nod in the global overall type programs. By and large, however, the work in this area is not organized and seems to be even more lacking in direction than other areas. The second major area which has not as yet shown a significant investment in terms of developing a data base upon which later work could be built is that of infancy. With ages for educational intervention decreasing by leaps and bounds it may very well be that some attention to this area will be needed if this data base is to be available by the time intervention at this age level begins.

These are some of the conclusions which have come out of a study and review of the programs in early childhood education research and development funded by the Bureau of Research of the Office of Education. While there is much good and exciting work in progress with great potential for improving the educability of young children the field as a whole lacks national direction. This would seem to be a necessary first step in order to make expectation of achievement a realistic possibility. It is thought that the previously delineated notion that the field of early childhood education stands at its critical period is a correct one and that, therefore, time is of the essence in getting about these tasks.

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APPENDICES

APPENDIX 1

National Laboratory on Early Childhood Education
Programs Included in Current Analysis

Arizona Center for Early Childhood Education

A-C	The development of an instructional program with new objectives for early childhood education
A-D	Development and evaluation of new instructional and ancillary personnel roles
A-E	Cross-Cultural Comparisons: An extension of the Arizona population description study
A-F	Basic Learning Processes

Chicago Early Education Research Center

G-A	Studies in early influences upon social and cognitive responsiveness
G-B	Studies of children's language and cognitive development
G-C	Studies in moral judgment and cognitive stages
G-D	Studies in normal classroom behavior
G-E	Studies of planned change and communication in school systems
G-F	Studies of achievement motivation
G-G	Research in the methodology of longitudinal studies

Cornell Research Program in Early Childhood Education

C-B	Curriculum Development and early school learning
C-C	Analysis and modification of home teaching environments
C-D	Cognitive and emotional development in infancy

Kansas Center for Research in Early Childhood Education

K-A	Individual differences in infant learning and development
K-B	The use of programming procedures in the development of preacademic intellectual skills for children 15 months to 5 years
K-C	Studies of language learning and language competency
K-D	Acquisition and performance of regulatory social responses
K-E	A study of the ecological reinforcers of the preschool environment

Peabody Demonstration and Research Center for Early Education

P-B	Intervention Studies
P-C	Ecological Studies
P-D	Individual Characteristics
P-E	Supportive Activities

Syracuse Center for Research and Development in Early Childhood Education

S-A	Analysis of cognitive behaviors
S-B	Social emotional development
S-C	The longitudinal evaluation program

APPENDIX 2

Research and Development Centers Programs Included in Current Analysis

Georgia Research and Development Center in Educational Stimulation

- Language Arts and Verbal Learning
- Mathematics
- Science
- Social Science
- Art
- Music
- Physical Education
- Evaluation
- Developmental Psychology

Pittsburgh Learning Research and Development Center

- Primary Education Project
- Individually Prescribed Instruction
- Beginning Reading Project
- Preschool Skills

APPENDIX 3

Regional Educational Laboratories Programs Included in Current Analysis

- Appalachia Educational Laboratory
    - Early Childhood Education Component
    - Appalachia Focused Language Component
- Central Atlantic Regional Educational Laboratory
- Central Midwestern Regional Educational Laboratory
    - Early Development Adversity Project
    - Learning Disabilities Program
    - Aesthetic Education Program
- Center for Urban Education
    - A Prekindergarten Curriculum
    - Early Reading Experiment
    - Instructional Profiles
- Far West Laboratory for Educational Research and Development
    - Education Beginning at Three or Four Years of Age
- South Central Region Educational Laboratory Corporation
    - Compensatory Kindergarten
    - Day Care Program
    - Saturday School
    - Bilingual Family School

Southeastern Education Laboratory

- Communication Skills Development Program
- Interpersonal Relations Component
- Rural Isolated Schools
- Readimobile Project

Southwestern Cooperative Educational Laboratory

- Oral Language Program
- Reading Explorations
- Sociocultural Factors

Southwest Educational Development Laboratory

- The Good Samaritan Center
- Fort Worth Central Cities Educational Development Center
- McAllen Pilot Test Center
- Caddo and Bosier City Pilot Test Centers

Southwest Regional Laboratory for Educational Research and Development

- Communication Skills Program
- Problem Solving Skills Program
- Computer-Based Systems
- Educational Research and Evaluation Procedures Compendium

APPENDIX 4

Bureau of Research Cooperative Research Projects Included in Current Analysis

BR #: 5-0342 Project Title: An Evaluation of Effectiveness of an Enriched Curriculum in Overcoming the Consequences of Environmental Deprivation
FY '69 funds: $104,709 Principal Investigator: Martin Deutsch and Leo S. Goldstein

BR #: 5-0540 Project Title: Prekindergarten Programs for Educationally Disadvantaged Children
FY '69 funds: $15,534 Principal Investigator: Louis T. Di Lorenzo

BR #: 5-0590 Project Title: Effects of Preschool Stimulation upon Subsequent School Performance Among the Culturally Disadvantaged
FY '69 funds: $11,839 Principal Investigator: Walter T. Plant

BR #: 6-1341 Project Title: The Interaction of the Adult and the Child in the Pre-School Setting
FY '69 funds: $49,698 Principal Investigator: Alfred L. Baldwin and Clara P. Baldwin

BR #: 6-2771 Project Title: The Natural History of the Education of the Deprived Negro Child
FY '69 funds: $82,000 Principal Investigator: Helen Gouldner

BR #: 8-0475 Project Title: Television for Preschool Children
FY '69 funds: $950,000 Principal Investigator: Joan Ganz Cooney

BR #:	5-0215	Project Title:	The Center for Research and Development on Educational Differences
FY '69 funds:	$535,059	Principal Investigator:	Theodore R. Sizer
BR #:	6-1328	Project Title:	The Effects of Prekindergarten Training in Language and Logical Thinking on Subsequent Intellectual Development
FY '69 funds:	$30,749	Principal Investigator:	James M. Dunlap
BR #:	5-0701	Project Title:	Instruction of Socioeconomically Disadvantaged Preschool Children
FY '69 funds:	$44,472	Principal Investigator:	Evan R. Keisler and Carolyn Stern

APPENDIX 5

Goals and Objectives of All Programs and Projects Studied by Category

A. Development of Knowledge Base for Early Childhood Education

Individual Characteristics

1. Peabody--Individual Characteristics
2. Chicago--Studies of Children's Language and Cognitive Development
3. Syracuse--Analysis of Cognitive Behavior
4. Syracuse--Social Emotional Development
5. Kansas--Studies of Language Learning and Language Competency
6. Arizona--Basic Learning Processes
7. Chicago--Studies in Moral Judgment and Cognitive Stages
8. Chicago--Studies in Normal Classroom Behavior
9. Cornell--Cognitive and Emotional Development in Infancy
10. Kansas--Individual Differences in Infant Learning and Development
11. 5-0215 Center for Research and Development on Educational Differences
12. CEMREL--Early Developmental Adversity

Environmental Influences

1. Chicago--Studies of Achievement Motivation
2. Arizona--Basic Learning Processes
3. Arizona--Cross-Cultural Comparisons: An Extension of the Arizona Population Description Study
4. Peabody--Ecological Studies
5. Chicago--Studies in Early Influences Upon Social and Cognitive Responsiveness
6. Kansas--A Study of the Ecological Reinforcers of the Preschool Environment
7. Kansas--Acquisition and Performance of Regulatory Social Responses
8. 6-2771 The Natural History of the Education of the Deprived Negro Children
9. 6-1341 The Interaction of the Adult and the Child in the Preschool Setting
10. SWCEL--Sociocultural Factors
11. CEMREL--Early Developmental Adversity

B. Curriculum Research and Development

1. Arizona--The Development of an Instructional Program With New Objectives for Early Childhood Education
2. Cornell--Curriculum Development and Early School Learning
3. Cornell--Analysis and Modification of Maternal Teaching Strategies in Rural Poor Families
4. Syracuse--Analysis of Cognitive Behaviors
5. Kansas--The Use of Programming Procedures in the Development of Preacademic Intellectual Skills for Children 15 months to 5 years
6. Peabody--Intervention Studies
7. 6-1328 The Effects of Prekindergarten Training in Language and Logical Thinking on Subsequent Intellectual Development
8. 5-0590 Effects of Preschool Stimulation upon Subsequent School Performance Among the Culturally Disadvantaged
9. 5-0540 Prekindergarten Programs for Educationally Disadvantaged
10. 5-0342 An Evaluation of Effectiveness of an Enriched Curriculum in Overcoming the Consequences of Environmental Deprivation
11. 5-0701 Instruction of Socioeconomically Disadvantaged Preschool Children
12. 8-0475 Television for Preschool Children (CTW)
13. SWRL--Communication Skills Program
14. SWRL--Problem Solving Skills
15. SEDL--Fort Worth Center
16. SEDL--Good Samaritan Center
17. SEDL--McAllen Center
18. SEDL--Louisiana Center
19. SEL--Communication Skills Development Program
20. SEL--Interpersonal Relationships Component
21. SCREL--Compensatory Kindergarten
22. SCREL--Day Care
23. SCREL--Saturday School
24. SCREL--Bilingual Family School
25. Far West--Educational Beginning at 3 or 4 years of age
26. CUE--Prekindergarten Curriculum
27. CUE--Early Reading Experience
28. CUE--Instructional Profiles
29. CEMREL--Learning Disabilities Program
30. CEMREL--Aesthetic Education Program
31. CAREL--Development of Curriculum in Arts and Humanities for Children 3-8

32. AEL--Preschool Curriculum for Appalachian Children 3-5 Via TV
33. AEL--Appalachia Focused Language Component
34. SWCEL--Oral Language Program
35. SWCEL--Reading Explorations
36. Georgia--Language Arts
37. Georgia--Mathematics
38. Georgia--Science
39. Georgia--Social Science
40. Georgia--Art
41. Georgia--Music
42. Georgia--Physical Education
43. Pittsburgh--Primary Education Project
44. Pittsburgh--Individually Prescribed Instruction
45. Pittsburgh--Beginning Reading
46. Pittsburgh--Preschool Skills

C. Educational Change Agents

1. Arizona--Development and Evaluation of New Instructional and Ancillary Personnel Roles
2. Cornell--Analysis and Modification of Home Teaching Environments
3. Peabody--Training Trainers of Aides
4. Peabody--Headstart Home Visitor Study
5. 8-0475 Children's Television Workshop
6. Chicago--Studies of Planned Change and Communication in School Systems
7. Far West--Education Beginning at 3 or 4 Years of Age
8. SEL--Readimobile
9. SEL--Rural Isolated Schools
10. AEL--Early Childhood Education Component
11. SCREL--Saturday School
12. SCREL--Bilingual Family School

D. Development of Evaluation Techniques and Supporting Technology

1. Chicago--Research in the Methodology of Longitudinal Studies
2. Syracuse--The Longitudinal Evaluation Program
3. Peabody--Supportive Activities
4. SWRL--Education Research and Evaluation Procedures Compendium
5. Georgia--Evaluation

E. Other

1. SWRL--Computer Based Systems
2. SWRL--Educational Research and Evaluation Procedure Compendium
3. SCREL--Day Care

APPENDIX 6

TAXONOMY SHEETS ON ALL PROGRAMS AND PROJECTS INCLUDED IN CURRENT ANALYSIS

BUREAU OF RESEARCH TAXONOMY ON

NATIONAL LABORATORY ON EARLY CHILDHOOD EDUCATION
PROGRAMS ANALYZED

			G	I	J	K	L	M	N	O	Q
	1 2 3 4	5 6	7 8 9	10 11 12	13 14 15	16 17 18	19 20 21	22 23 24	25 26 27	28 29 30 31	32 33 34 35 36 37 3
1	ARIZONA	A-C	03	14	13	00	01	10	50	000	82000
2	ARIZONA	A-D	03	10	01	00	01	40	24	000	52000
3	ARIZONA	A-E	01	01	30	00	21	02	05	000	32000
4	ARIZONA	A-F	01	10	01	00	01	50	50	000	7000
5	ChiCAGO	G-A	01	10	01	00	01	50	50	000	35000
6	ChiCAGO	G-B	01	10	01	00	01	50	50	000	35000
7	ChiCAGO	G-C	01	14	01	00	01	50	51	000	18000
8	ChiCAGO	G-D	02	10	01	00	01	50	50	000	32000
9	ChiCAGO	G-E	02	10	01	00	01	50	24	000	20000
10	ChiCAGO	G-F	01	10	30	00	01	50	52	000	16000
11	ChiCAGO	G-G	60	10	01	00	01	51	70	000	28000
12	Cornell	C-B	02	13	01	00	01	50	31	000	58000
13	Cornell	C-C	02	13	01	01	21	02	42	000	66000
14	Cornell	C-D	01	12	20	00	01	50	50	000	20000
15	KANSAS	K-A	01	12	01	00	01	50	51	000	47000
16	KANSAS	K-B	02	10	01	00	01	50	33	000	38000
17	KANSAS	K-C	01	10	01	00	01	51	51	000	50000
18	KANSAS	K-D	01	12	01	00	01	50	52	000	18000
19	KANSAS	K-E	01	10	01	00	01	50	39	102	16000
20	Peabody	P-B	01	10	10	00	21	50	01	000	78000
21	Peabody	P-C	01	13	01	00	01	50	40	000	44000
22	Peabody	P-D	01	10	01	00	01	50	50	000	36000
23	Peabody	P-E	30	10	00	00	01	02	00	000	62000
24	Syracuse	S-A	02	13	01	00	01	50	51	000	90000
25	Syracuse	S-B	01	10	01	00	01	50	52	000	13000
26	Syracuse	S-C	60	10	01	10	01	50	50	000	36000
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BUREAU OF RESEARCH TAXONOMY ON 62/63

RESEARCH AND DEVELOPMENT CENTER PROGRAMS ANALYZED

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	1 2 3 4 5 6	7 8 9	10 11 12	13 14 15	16 17 18	19 20 21	22 23 24	25 26 27	28 29 30 31	32 33 34 35 36 37 38
1	Geo-Curricula	03	10	01	00	01	10	31	110	252600
2	Geo-MATh	03	10	01	00	01	10	31	122	79400
3	Geo-Sci	03	10	01	00	01	10	31	123	57000
4	Geo-Soc. Sci	03	10	01	00	01	10	31	124	93700
5	Geo-ArT	02	10	01	00	01	52	31	121	73300
6	Geo-Music	03	10	01	00	01	10	31	121	79900
7	Geo-P.E.	03	10	01	00	01	10	31	131	55200
8	Geo-Eval.	10	10	01	00	01	50	31	101	123900
9	Geo-Dev. ψ	01	10	01	00	01	50	50	000	—
10	PiTT-PEP	03	10	01	00	01	10	31	101	14000
11	PiTT-IPI	03	20	01	00	01	10	31	101	461000
12	PiTT-beginning	02	22	01	00	01	52	31	113	55000
13	PiTT-preschool	02	10	01	00	01	52	31	101	NOT OE
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BUREAU OF RESEARCH TAXONOMY ON

REGIONAL EDUCATIONAL LABORATORY PROGRAMS ANALYZED

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	1 2 3 4 5 6	7 8 9	10 11 12	13 14 15	16 17 18	19 20 21	22 23 24	25 26 27	28 29 30 31	32	33	34	35	36	37	38
1	AEL-ECE	03	13	19	22	41	47	34	101		2	4	4	1	5	9
2	AEL-AFL	02	13	19	22	41	50	34	110			6	1	4	6	9
3	CAREL	03	21	10	10	21	08	31	121		3	9	0	0	0	0
4	CMREL-EDA	01	12	30	00	25	50	50	000			5	0	8	6	9
5	CMREL-LD	03	22	10	00	20	10	30	101		1	1	3	1	1	3
6	CMREL-AesEd	03	22	01	00	01	10	31	121		2	4	7	6	4	3
7	CUE-P-K	03	13	01	10	01	10	31	101			8	0	0	0	0
8	CUE-Rdng	02	14	01	00	01	10	30	113		2	9	6	0	0	0
9	CUE-IP	03	22	01	00	01	12	31	403		1	7	1	0	0	0
10	EW-	03	13	01	00	01	08	33	101			5	9	0	0	0
11	SCREL-PS	03	13	10	00	21	10	31	101			2	7	5	2	9
12	SCREL-DC	03	13	10	00	21	02	31	101			5	5	8	9	1
13	SCREL-SS	03	14	10	00	21	02	01	101			3	3	0	5	5
14	SCREL-RFS	03	14	10	00	40	02	01	111			2	7	0	4	5
15	SEL-CS	03	21	19	00	41	10	31	113		3	3	0	0	0	0
16	SEL-IP	02	20	10	00	21	10	31	130		N	O	T		0	E
17	SEL-RIS	03	20	19	20	41	08	30	000		N	O	T		0	E
18	SEL-Rmo	20	14	19	20	41	02	30	101			6	0	0	0	0
19	SWCEL-OLP	03	22	10	00	40	10	31	112		3	1	9	9	3	2
20	SWCEL-EngExp	02	10	10	00	40	08	31	113			7	8	3	1	5
21	SWCEL-So-cul	02	01	10	00	40	50	40	000			—	—	—	—	
22	SEDL-Ft.W	03	14	10	10	21	10	31	101			8	0	5	1	4
23	SEDL-GS	03	13	13	10	40	10	31	111			8	0	5	1	4
24	SEDL-McA	03	13	13	00	37	08	31	101			2	6	8	3	8
25	SEDL-La	03	14	10	00	21	02	01	101			8	0	5	1	4
26	SWRL-CS	03	22	01	00	01	10	31	113	1	0	0	5	5	0	0
27	SWRL-PSS	03	22	01	00	01	10	31	102		3	0	2	5	0	0
28	SWRL-CBS	60	20	01	00	01	30	23	000		6	2	5	0	0	0
29	SWRL-ER&E	40	20	01	00	01	50	24	500			7	5	0	0	0
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BUREAU OF RESEARCH TAXONOMY ON

COOPERATIVE RESEARCH PROJECTS ANALYZED

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1	DeusTche	03	13	10	11	21	10	31	101	104709
2	DeLorenzo	02	13	10	00	21	07	01	101	15534
3	PLANT	02	13	13	00	21	07	31	101	11839
4	BAldwin	01	13	10	00	01	50	05	000	49698
5	Gouldner	01	14	11	11	21	50	05	000	82000
6	CTW	03	13	01	00	01	02	34	101	950000
7	HARVARd	02	20	01	00	01	07	50	000	535059
8	DunLap	03	13	01	00	01	10	31	101	30749
9	UCLA	03	13	10	00	21	10	31	110	44472
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APPENDIX 7

PROGRAM SUMMARIES OF NATIONAL LABORATORY ON EARLY CHILDHOOD EDUCATION PROGRAMS INCLUDED IN CURRENT ANALYSIS

ARIZONA CENTER FOR EARLY CHILDHOOD EDUCATION

A-C

Title: The development of an instructional program with new objectives for early childhood education

Principal Staff: Dr. Marie M. Hughes, Halene Weaver, Mary Coxon

Purpose, objective, or goals: To continue refining the Tucson Model for Early Childhood Education. In addition, the program will include a five-year-old group and an extension of the program of our third graders through their fourth grade.

Importance, need, or justification: The University of Arizona and Tucson District No. 1 Cooperative Project was a three-year project during which a new curriculum for young children, especially Mexican-Americans, was created. With this program implementation was an invention of specialized personnel (Program Assistants) who worked in the classroom to support and to demonstrate the techniques needed to work with the concepts and skills required by the new program goals and procedures.

Our subjects were six years of age, which is the time that most of American's children are in school, and curriculum building was continued through the succeeding years. This strategy has assumed even more significance since Head Start evaluations have made necessary the Follow Through program into other grades. We were ready with a model created within a public school setting for kindergarten through third.

Method, strategy, or design: The most potent aspect in the collaborative effort of University and public school was the administrative setting-aside of all curriculum requirements, thus relieving the pressure on teachers so that they could devote their

Method, strategy, or design (Continued)

energies to the development of a new program. The second was the generosity with budget which allowed Program Assistants to work with eight to ten teachers each in the development of the program. The Program Assistant spent one full day a week with the director in evaluation of status of new program and an identification of next steps. The project teachers were brought together every other week for training and reporting of their difficulties and successes before school workshops were held with teachers.

Research on the disadvantaged child and the bilingual child was analyzed and discussed. Continued effort was made to separate opinion from conclusions that had some support from quantitative analysis of data.

Visitation to classrooms among teachers was supported through a budget for substitutes.

The first year's efforts were devoted to systematization of the teaching of language; the professional and conscious use of reinforcement, largely social; and lastly, room organization.

The second year continued first year's efforts and added a specific focus on cognitive training. Improved methods of diagnosis of children's status were designed.

The third year placed original subjects in the third grade with focus on more formal reading instruction.

Evaluation methods were improved and the present year is limited to intensive operation of the Research School which is also the lowest school within the poverty area.

Characteristics of the users:

Although the population with which we have been working is Mexican-American, serious

Characteristics of the users (Continued)

visitors to our schools have included school systems without bilingual students. The present conceptual presentation of our goals in four areas with the behavior of objectives specifically related to a given school population leaves the early education program applicable to all children.

The four goal areas are:
1. Development of language control
2. Motivational system
3. Cognitive functioning or intellectual base
4. Societal arts which include reading, writing, mathematics, and the skills of planning, decision making, and cooperation, etc.

The month of November, we had visitors from thirteen states. Of course, our largest consumers are the Follow Through program units in fourteen locations around the country.

Expected end products of results:

As already stated, we have an exportable model of an early education program for ages three through eight. In fact, we have argued that it extends through age eleven. The documents in final stages or preparation include:
1. The systematization of the natural method of learning language.
2. The total model presented with complete rationale and integration of one goal with another.
3. A series of small pamphlets explicating key operating components of the model; e.g., reading environment, room organization, intellectual kits.
4. Bulletin describing the original University and Tucson District No. 1 Cooperative Project with the conclusions quantitative and subjective.

Expected end products of results (Continued)

5. Bulletin describing the concept and usefulness of Program Assistants.
6. Descriptions of useful materials for special purposes, such as facilitation of recall, independent work.

Evaluation procedures:

Language appraisal: Van Alstyne Picture Vocabulary Test, Wechsler Vocabulary, Stanford-Binet Vocabulary, Full-Range Picture Vocabulary Test (Ammons).

General appraisal: Metropolitan Readiness Tests, California Reading Test (Primary), Stanford-Binet Reading, Metropolitan Achievement Tests. Also, a series of intellectual tasks developed within the Arizona Center.

Our evaluation has been less authoritative than we like because of the conditions under which the work was started. No comparable classrooms were available for control (nor was there money) for a proper design. To the best of our ability some correction has been made for this. Since the 1965-66 subjects were selected downward, it will be 1969-70 before we shall have comparable groups not contaminated with present program. This group is the 1964 1-C group in fifth grade.

Formal measures of teacher-pupil interaction program and non-program rooms have been taken and subjected to statistical analysis. Also, similar comparisons of teacher attitudes have been made.

Many experts in early childhood education have visited two or more days and written an analysis and critique of the program.

Four doctoral dissertations specifying with greater depth some of the relationships within the program.

Relationship to other center programs and center focus:

This program is closely related to the population and cross-cultural study, the collaborative language study, and basic learning research. The development of personnel with its evaluation and, of course, the module of Follow Through with the transmission of the Early Education Model are also closely related to this program.

To date, the focus of the Center has been the development and continued testing of the early education program with its interrelations with public schools, parents, and aides.

Flow chart, time schedule:

1968-69

1. Complete reports and other writing
2. Analyze fourth grade content and results
3. Increase parent involvement in school

1969-70

Concentrate on program development and evaluation for three- and four-year-olds.

1970-71

Evaluate usefulness of early childhood education model in middle and upper-class schools.

ARIZONA CENTER FOR EARLY CHILDHOOD EDUCATION

A-D

Title: Development and evaluation of new instructional and ancillary personnel roles

Projects A: Development of new classroom personnel roles
B: Development of program dissemination personnel
C: Development of parents as instructional helpers
The mother's role as a teacher of infants and toddlers

Principal Staff: Dr. Ralph J. Wetzel, Arline B. Hobson, Billie J. Underwood

Purpose, objective, or goals: To develop techniques based on research findings which bring into more formal involvement with the educational enterprise long recognized but ill-used instructional personnel resources. The work focuses on three of these resources: new classroom personnel, parents, and classroom consultants. The aim is to translate research findings into a form which can be effectively used by these resources for fulfilling the influential roles which they are assumed to have in instructional processes.

Importance, need, or justification: Increasingly, the teacher-pupil relationship is seen to be only one of many kinds of instructional interactions which contribute to the total educational thrust. Other significant sources of instruction include parents, peers, new classroom personnel, the media, and the like. The assignment of formal responsibility to these diverse and powerful instructional role relationships has lagged behind the attention paid to them. The reasons for the lag are many. Effective procedures which articulate these new roles

Importance, need, or justification (Continued)

into the instructional process are missing; training procedures which prepare the individual to assume instructional responsibility is not readily available; the findings of contemporary research identifying the environmental sources of influence on behavior are not translated into techniques available to educational personnel. Their organization and incorporation into formal educational efforts seems imperative.

Method, strategy, or design:

Procedures which develop new role enactments must take into account the initial repertoires of the individuals, determine carefully the terminal behaviors required by the role, and construct a shaping program which moves the individual towards those terminal objectives. We have been working largely in two areas; the development of classroom personnel (aides and preschool teachers) into effective managers of behavior, curriculum designers, and implementors; and the development of teachers into classroom consultants and program implementors. The work with aides is most highly developed, the work with teachers as new program consultants well under way, and the work with parents just beginning. The training objectives for classroom personnel overlap and have many implications for work with parents. These objectives are:

1. Clarification and verbalization of goals with children
    a. Developing statements about children's behavior
    b. Developing specific goal statements
2. Getting rid of inappropriate goal statements
3. Developing behavior management skills
    a. Learning to observe
    b. Recognizing reinforcers
    c. Using reinforcement
    d. Setting the situation

Method, strategy, or design (Continued)

4. Program Development
    a. Planning
    b. Curriculum content
    c. Component analysis
    d. Materials
    e. Use of consultants
    f. Job organization and planning, etc.
5. Evaluating with data
6. Team work and problem solving, etc.

Both the content and the techniques of development are based on research findings and methods. We are developing methods for shaping new roles which focus on the following:

1. Trainer-trainee interaction (i.e., language, atmosphere, and tone)
2. Information and directing (the uses and misuses of discussion)
3. Setting the occasion for appropriate behavior
4. Correcting trainee behavior
5. Trainee practice
6. Written material
7. Assignments
8. Trainee exercises
9. Using data to instruct.

Characteristics of the users:

School districts, training institutions, special programs, program developers, innovators, and implementors.

Expected end products of results:

1. A Manual for Trainers of New Classroom Personnel and other Adjunctive Educational Roles
2. Instructive materials for parents and aides (appropriate for lower educational levels)
3. Survey of Educational Attitudes (written and pictorial versions)
4. Materials and techniques which enable the para-professional to evaluate child behavior change

Expected end products of results (Continued)	5. A series of data analysis forms 6. Pre- and Post training tapes of aide behavior 7. A paper on the analysis of training techniques and their evaluation 8. Evaluation instruments.
Evaluation procedures:	Attitude survey administered pretraining, post training and at three months follow-up. Video tapes of trainee behavior pre- and post training. Teacher and aide organizational efficiency measure. Target-Incentive-Action measures.
Relationship to other center programs and center focus:	Since the classroom program model now being developed by this Center makes significant use of new classroom personnel and consultants, the evolution and evaluation of new techniques for enhancing the competancies of instructional personnel has immediate relevance. Not only should this program produce staff who are able to evaluate program effects, it should produce staff who can readily implement newly developed program concepts. The population study should provide new insights into the basic repertoires of those whom the training techniques are designed to effect, while the basic laboratory techniques provide the basic data which the present program must convert into applied research and practice.
Flow chart, time schedule:	Attached.

ARIZONA CENTER FOR EARLY CHILDHOOD EDUCATION

A-E

Title:	Cross-Cultural Comparisons: An Extension of the Arizona Population Description Study
Principal Staff:	Dr. I. Roger Yoshino, Mark Winheld, Angie Garcia
Purpose, objective, or goals:	To compare the populations of a physical area designated within the city as the poverty area. Although the largest number of families are Mexican-American, Anglos, Negroes, and Indians also live within the area. The representation is chosen on a stratified basis of a percentage of the population. The results so far have given us 247 Mexican-American families with children within the experimental project. Sampling of the other subgroups will begin in the first quarter of 1969.
Importance, need, or justification:	Since this area is a contiguous one, it provides an opportunity to obtain an accurate description of a population covered by the cliche, "poverty area." It provides information on important environmental variables related to school achievement.
Method, strategy, or design:	The interview method is used with the interviewees choosing to speak in Spanish or English. (Nearly all Indians in the area speak Spanish.) All interviewers are bilingual. The time of day or night for the interview is chosen by the interviewee.
Characteristics of the users:	Sociologists, urban planners, and school personnel.
Expected end products of results:	An authoritative statement of the relationship of these populations to one another and the diversity in acculturation which they represent.

Expected end products of results (continued)

Information on attitudes toward school and the relationship of these variables to school achievement. (These data are not generally available.)

The increased insight regarding research needed to clarify still further the environmental variables that affect school achievement.

Two bulletins (now in process):

1. A statistical statement of immediate usefulness to public schools.
2. A major analysis and discussion of the acculturation of these ethnic and cultural groups within a small city.

Evaluation procedures:

The consistency of responses to questions will be analyzed as a check on the reliability of these demographic data.

The variability of the measures will be of particular interest since the degree of heterogeneity of this population is as yet not clear.

Finally, we will look especially to those points where these data overlap data of earlier studies to assess the degree of corroboration.

Relationship to other center programs and center focus:

Basic data regarding environmental factors related to school achievement.

Flow chart, time schedule:

1968-69

Bulletin I: Statistical presentation
Bulletin II: Synthesis and discussion of Mexican-American acculturation

1969-70

Presentation of data on Negro and Indian populations of the area.

ARIZONA CENTER FOR EARLY CHILDHOOD EDUCATION

Title: Basic Learning Processes

Principal Staff: Dr. Ralph J. Wetzel, Mr. Joseph Patterson, Mrs. Marian Martin

Purpose, objective, or goals: To identify factors in the environments of children which control the acquisition and performance of academically related behaviors. Particular attention is paid to perceptual processes and to other behaviors not traditionally identified by curricula but which clearly support educational achievement, e.g., attention, retention, discrimination, perceptual speed, hand-eye coordination, and certain social skills such as proximity, imitation, and group behaviors. Environmental factors studied include reinforcement functions and the stimulus control factors often recognized in motivational and perceptual processes.

Importance, need, or justification: It is becoming clear that academic skills are dependent upon an underlying repertoire of supportive skills. These skills may indeed prove to be most important since they may enable the learner to master the more complex tasks with which he will be faced at later stages in the instructional process. The supportive skills have not yet been identified clearly nor have their relationships to complex achievements been specified. Most educators still regard these skills to be characteristics of the child's "natural endowment" rather than behaviors taught by the environment. Research findings which specify the conditions under which these behaviors develop are the first step toward their receiving the attention from educational personnel which they deserve.

Method, strategy, or design:

The preschool laboratory and the experimental trailer are the principal facilities for this program. The preschool students are the subjects for both group and individual research projects. Reinforcement parameters have been systematically varied in the preschool lab and extended to classroom situations in public schools. The perceptual work to date has involved elementary students at Ochoa School where the research trailer is now located. Perceptual process instrumentation is now being set up in the individual research labs of the preschool. In addition, apparatus has been completed for the analysis of reinforcement parameters and installed in the laboratory.

The primary research method is based on the experimental analysis of behavior both single subject analysis and treatment x treatment x subject design.

Characteristics of the users:

Researchers, program innovators, training institutions.

Expected end products of results:

1. A token reinforcement system for a classroom of Mexican-American first and second graders: techniques and evaluation of classroom management, pupil behavior, and achievement.
2. A bibliography of token reinforcement systems with young children.
3. A study of disruptive behavior as a function of teacher reward and punishment schedules.
4. A paper: Observational learning and reinforcement.
5. A review and bibliography of matching-to-sample research techniques and findings.
6. Construction of a five choice matching-to-sample automated research device.
7. A 180 frame matching-to-sample program for the development of number concepts.

Expected end products of results (continued)

8. A research report on the development of number and errorless discrimination techniques.
9. A research study of individual and group reinforcement parameters.
10. A research study on the development of attention and other supportive behaviors.
11. A research study on the development of perceptual processes in children and their relation to classroom performance.

Evaluation procedures:

As a body of research the projects in this program are evaluated in a variety of ways. The single subject analysis as described by Sidman in his book *Tactics of Scientific Research* research has been relied upon particularly for the study of reinforcement effects. The rationale and techniques of these methods are discussed in a forthcoming monograph by Bijou and his colleagues (a monograph for the *Journal of Experimental Child Psychology*) and their applications to applied research in the natural environment discussed in a forthcoming book by Tharp and Wetzel (*Behavior Modification in the Natural Environment*, in press, Academic Press). In addition, a treatment x treatment x subject design will be used which will submit the data to an analysis of variance.

Relationship to other center programs and center focus:

The data from the basic research projects feed into both the development of an instructional program for young children and into the program for developing the competencies of instructional personnel. Researchers have frequently failed to translate findings into a form relevant to classroom practice and have neglected procedures of direct training for the implementation of new techniques based on research findings. The correction of this state of affairs is the primary aim relating the programs of this Center.

G-A

Title:	Studies in Early Influences Upon Social and Cognitive Responsiveness
Principal Staff:	Professor Daniel Freedman, P. Druian, M. Edelman, L. Fourcher, N. Freedman, R. Marvin, D. Omark
Purpose, objective, or goals:	To identify and distinguish early environmental and hereditary influences upon children's social and cognitive response patterns from the neonatal period through the early school years with particular reference to different developmental sequences attributable to differences between identical and fraternal twins, sex differences, and continuities and discontinuities of the first six years of life.
Importance, need, or justification:	With research being taken more and more seriously which reflects the crucial importance of early influences on future growth and development of human potential, the parallel need for a solidly validated data base describing how environmental influences operate emerges strongly as the essential foundation upon which intervention programs can be developed.
Method, strategy, or design:	Qualitative and quantitative description of filmed and video-taped data, and protocols based on direct observations of subjects are being analyzed in accordance with various theoretical frameworks. Patterns of social and cognitive responsiveness sustained during segments of the first six years are being identified and interrelationships among them described. Selection of subjects has been made to make possible cross-cultural comparisons also.

Characteristics of the users and sample:	Sample: Chinese-American, European-American newborns and random groups of children in the age range four through seven years. Users: Other research personnel interested in the areas under investigation and in fields related to them; scholars and educators engaged in research-and-development activity such as formulating and pilot-testing of intervention programs for which results of this research would form an appropriate part of the knowledge source.
Expected end products of results:	The descriptive and inferred findings of the research activity in this program continue to be reportable in film records and written accounts. The films will be available for display and teaching purposes, a monograph write-up in preparation on some of the twin material along with journal articles such as one in preparation for Science will be accessible to the scientific and educational communities.
Evaluation procedures:	Both process and product evaluation in their application to basic research investigations are utilized in the appropriate phases of Program I as the pervasive, conventional requirements of such studies demand.
Relationship to other center projects and center focus:	The results of Program I research are being watched carefully by EERC investigators, especially those in Program II, for implications they give promise of carrying for studies of children's language and cognitive development at later stages. In addition, all EERC personnel are alert to the possibilities of generating new research on the basis of questions raised during the course of Program I activity.
Flow chart, time schedule:	The progress of research in Program I is reflected in the flow of projected report documents:

Flow chart, time schedule (Continued)	Winter, 1969--journal article on selected cross-ethnic findings Summer, 1969--summary article on findings in twin studies Fall, 1969--preliminary report on social development study findings
Linkages of activities within the program:	The development of analytical concepts in one activity which have relevance in the data handling for other activities is a frequent occurrence. Linkages among activities in this program through shared results of significance and common utilization of data are also pervasive as in the case of the twin and cross-cultural studies. Joint use of Piagetian tasks in several phases of the program activities represent a linkage point involving collaborative contacts.

CHICAGO EARLY EDUCATION RESEARCH CENTER

G-B

Title:	Studies of Children's Language and Cognitive Development
Principal Staff:	Professors Carol Feldman, Wilbur Hass, Robert Hess and Virginia Shipman; Frederick Lighthall; L. Pangburn; M. Shen; D. Weinberg
Purpose, objective, or goals:	To define and to assess variables in language and cognitive development with emphasis on the four to eight-year-old age range; to determine relationships among these variables, between them and other aspects of children's functioning, and between them and children's social backgrounds; to study processes by which change in children's language and cognition may be brought about; to make information on these topics more readily available to persons immediately concerned with carrying out preschool educational programs.
Importance, need, or justification:	The value of adequate conceptualizations of language and cognition in planning and assessing early education experience is particularly notable at the present time when general notions of what human language and thinking involve are changing so rapidly. The special importance of this program lies in the way in which it can relate such notions to children's actual behavior, and can demonstrate the way in which each child's functioning forms an interrelated network within him, varies from one child to another, and is modifiable by programs of intervention.
Method, strategy, or design:	The strategy of Program II consists in designing small-scale studies which together further the purposes identified above. The following methodological considerations apply variously to each investigation.

Method, strategy, or design (Continued)	a. formulation of theoretical justification of a language or cognition aspect of evident relevance b. determination of measurement procedures for that aspect often requiring original design c. tracing of age change in the aspect and establishing its relation to relevant developmental or background variables d. exploring the mechanisms of change in the aspect. One or another of these components may be emphasized in a single activity, and for each, the most relevant experimental or correlational study is set out.
Characteristics of users and sample:	Sample: Predominant among the variety of samples represented in this program are preschool and early grade children within the "normal" range on most parameters. In two cases, however, disadvantaged and lower-class bilingual children are included in the sample groups. Users: In addition to other knowledge producers, users of Program II products include professional operations personnel in educational enterprises engaged in program development or modification for young children.
Expected end products of results:	The results of Program II studies will be made public in speeches, papers, journal articles, or books, as seems best to achieve the broadest possible communication with the segments of the user population most deeply concerned with the end products as they emerge from the research activity.
Evaluation procedures:	Test-retest procedures provide evaluative data in some activities in this program as in the case of the study of maternal influences

Evaluation procedures (Continued)

on cognition. In this example as elsewhere, evaluation is treated as the usual component of standard research procedures.

Relationship to other center projects and center focus:

The results of Program II activities stimulate new research in other programs (and vice versa) by raising basic questions. At several points a mutality of interest between investigators has resulted in collaboration, once, for instance, in exploration of joint use of a data pool, and again in the cooperative formulation of a research problem now constituting a discrete activity.

Flow chart, time schedule:

The specific studies presently constituting Program II will be completed or nearly completed by the end of the 1969 project year. Others will be begun within the context of program purposes, often building on previous program work, as time, manpower, and subjects become available.

Linkages of activities within the program:

Program II activities all clearly relate to language development, cognitive development, or to the inter-relationship of the two and to this extent each is linked to all others. More specifically and illustratively, joint efforts among several program personnel on both methodological and substantive dimensions are underway through a new research thrust on language intervention.

CHICAGO EARLY EDUCATION RESEARCH CENTER

G-C

Title:	Studies in Moral Judgment and Cognitive Stages
Principal Staff:	Professors Lawrence Kohlberg and Rheta DeVries; L. Koley; J. Lewis; M. Blatt
Purpose, objective, or goals:	To explore Piaget's developmental tasks as uniquely meaningful measures of cognitive development in young children by examining relationships between them and primary mental abilities, and parameters of moral judgment.
Importance, need, or justification:	The usefulness of Piaget's formulations as a frame of reference for the study of development in children, and for the creation of educational programs based upon the insights about that development revealed in such studies, can be determined only after more is known about relations between the ideas of the famed stage theorist and other parameters of growth and influences upon them. Contributions to the generation of such knowledge are emerging from the fundamental studies in this program.
Method, strategy, or design:	Factor analysis is the statistical method being used to analyze the data derived from the testing of subjects. Batteries of instruments yielded the data upon which will be based explication of the crucial relationships which are the focus of study in this program.
Characteristics of the users and sample:	Sample: White, middle-class, kindergarteners and first grade children--bright, average, and retarded. Users: Students and researchers in a variety of fields--human development, psychology, education, and the like; program developers

Characteristics of the users and sample (Continued)	in educational institutions seeking a broader knowledge base upon which to draw in their work in curriculum and teaching methodology.
Expected end products of results:	The items listed in the flow chart section embrace the products constituting the reportable results of this research now planned. Additional spin-offs may expand the list during the next fiscal year.
Evaluation procedures:	Evaluation techniques are part of the rigorous research methodology utilized in this program.
Relationship to other center projects and center focus:	A number of other EERC activities are making use of Piaget's stage notions--the cognitive dimension of Freedman's work in Program I is based on this formulation; the study of maternal influences on cognition which is part of Program II makes use of the theory. Thus, at the conceptual level, intra-Center relationships among research personnel are very close indeed.
Flow chart, time schedule:	The projected schedule of forthcoming reports provides punctuation reflecting the flow of work in this program. Winter, 1969--report of factor-analytic study Spring, 1969--article on differential cognitive measures Fall, 1969--monograph on evaluation of cognitive development with Piaget methods
Linkages of activities within the program:	The two major activities within Program III are closely linked in their common purpose, common conceptual framework, and the research tradition shared by the principal investigators.

CHICAGO EARLY EDUCATION RESEARCH CENTER

G-D

Title:	Studies in Normal Classroom Behavior
Principal Staff:	Professors Philip Jackson and Susan Stodolsky; L. Berk; J. Bradbury; A. Karlson
Purpose, objective, or goals:	To describe the ways in which children accommodate to situational factors in their early school experiences, to relate the patterns of reactivity that emerge with such factors as age, sex, and type of school environment, and thus to provide the basis for the eventual development of intervention procedures designed to facilitate the goals of classroom instruction in the light of the research findings.
Importance, need, or justification:	A notable gap in research on teaching and learning is reflected in the paucity of validated knowledge about what actually happens to children in classrooms. Even the most basic observational studies in this realm have not been undertaken with any thoroughness. Results of studies in this program should begin to close that gap and will provide the basis upon which tested instructional alternatives for teachers may rest.
Method, strategy, or design:	Observational systems constitute the major methodological procedure in this program. Patterns and frequencies of selected behaviors by children in school settings and play situations are being revealed in the statistical analysis of the data derived from the observations. Cross-cultural validation is involved in one activity.
Characteristics of the users and sample:	Sample: Nursery school and primary grade children in middle class and mixed lower/ middle groupings constitute the subject samples.

Characteristics of the users and sample (Continued)	Users: Other research workers for whom results of these studies are relevant. Eventually those involved in operational school settings will find results of these studies useful.
Expected end products of results:	Some of the initial work in the observational/descriptive phases of Program IV research will be reported in a forthcoming issue of the Journal of Educational Psychology. The study segment on constraints encountered by nursery school students is in the final stages of data analysis which will be reported and planned for release in Spring, 1969. Following next summer, end products will be prepared in the research stream exploring children's transitional behavior in free play settings in school situations.
Evaluation procedures:	This process is infused in the various stages of the research procedures in Program IV.
Relationship to other center projects and center focus:	Program VII is particularly closely related to activities in this set of studies primarily through the collaborative work undertaken by Professors Jackson and Wiley in the conceptualization and data analyzing stages of the Nursery School project.
Flow chart, time schedule:	Not applicable in the present evolutionary stages of work within this program.
Linkages of activities within the program:	The major connections between activities within Program IV are described in the common purposes and methodologies which they share.

CHICAGO EARLY EDUCATION RESEARCH CENTER

G-E

Title:	Studies of Planned Change and Communication in School Systems
Principal Staff:	Professor Frederick Lighthall, L. Huyssen
Purpose, objective, or goals:	To describe, develop, and pilot test a new role, that of social psychological specialist, to facilitate planned change and communication in school systems.
Importance, need, or justification:	The inclusion of the social-psychological role among other professional roles within schools will contribute significantly to the effective review, adaptation, and incorporation of innovations in schools.
Method, strategy, or design:	Two trainee specialists in the new role have been placed in school systems and, by performing various functions of the role, are providing data that will be the basis of further modification and development of the role. Specifically, the trainees are providing data on such processes as entry, interpersonal conflict, membership (inclusion-exclusion), cross-role communication, territoriality, crisis management and interpersonal influence. Analysis of taped records of interventions in an elementary school system will provide a source of data upon which refinements in the training procedures for the specialists will be based.
Characteristics of the users and sample:	Sample: The trainees and school systems in which they are working have been selected in accordance with the established procedures for decision-making about student/interns and cooperating schools within the Graduate School of Education.

Characteristics of the users and sample (Continued)	Users: In addition to the generation of research data of use to other investigators, this program will provide guidance to trainers of professional personnel generally and within school systems particularly.
Expected end products of results:	An end product of this program will be the development of the new role in school systems, and, therefore, an increased capacity for cooperative innovation in these systems. Intermediate products will include a transcription of an audio-tape of a problem-sensing meeting that will provide basic data on some typical kinds of hidden problems that arise in planned change situations. In addition, the accumulated experiences of the role incumbents in the two training positions, including the communications problems to which they have addressed themselves, will be the focus of summer writing in 1969.
Evaluation procedures:	Customary evaluation procedures consonant with established research methodology are utilized throughout the study.
Relationship to other center projects and center focus:	The primary relationship between this program and others in the Center proceeds through potential applicability of its findings to the dissemination and installation in school systems of developed products from the other programs.
Flow chart, time schedule:	Inapplicable at this pilot research stage.
Linkages of activities within the program:	This is a single-project program.

CHICAGO EARLY EDUCATION RESEARCH CENTER

G-F

Title:	Studies of Achievement Motivation
Principal Staff:	Professor Robert LeVine, J. Barkow, L. Lahr, L. Langman, B. Veradacher
Purpose, objective, or goals:	The purpose of this program has been to improve understanding of the environmental conditions, particularly those connected with the socio-economic participation and values of parents, that produce in children achievement motivation or other dispositions related to cognitive adaptation.
Importance, need, or justification:	This program's importance derives from the fact that adaptation through cognitive performance is becoming increasingly central for rural migrants to the city in this country and throughout the world.
Method, strategy, or design:	The basic research strategy is a comparative one--the cross-cultural analysis of ethnic variations in achievement motivation and their educational and social consequences.
Characteristics of the users and sample:	Sample: The subject samples include a variety of ethnic groups in Chicago (Lithuanians, Cubans, Poles, and Armenians) as well as foreign groups (Yucatec Maya peasants, Cree Indians, and Hausa Nigerians). Users: Researchers and developers of educational programs, particularly those working with cultural groups other than the dominant one in the given society.
Expected end products of results:	Products of this program take the form of research papers and other publications. Examples are the Langman dissertation "Economy, Motives and Values: An Exploration into Casual Relationships," and the

Expected end products of results (Continued)	LeVine chapter "Cross-Cultural Study in Child Psychology" (in *Carmichael's Manual of Child Psychology*, edited by P. Mussen).
Evaluation procedures:	This process is embedded in the research procedures utilized throughout the projects in this program.
Relationship to other center projects and center focus:	A fundamental aim in this research is to make the cross-group comparison at home and abroad afford the entire Center an opportunity for replication of studies linking environment and performance. Thus, initial concentration has been on ethnic variations in parental environments before encompassing performance measures of children.
Flow chart, time schedule:	During the present contract period, it is anticipated that the initial phase of data collection at the newly established research outpost in northern Nigeria will be completed. The analysis of these data and their relationship to other aspects of the program, going forward and due for completion during the same time period in Chicago, will determine specifics in future time schedule projections.
Linkages of activities within the program:	Included in "Relationship" section above.

CHICAGO EARLY EDUCATION RESEARCH CENTER

G-G

Title:	Research in the Methodology of Longitudinal Studies
Principal Staff:	Professor David Wiley, W. Bramble, W. Keesling, W. Schmidt
Purpose, objective, or goals:	To develop new methodological procedures for longitudinal research investigations of young children, and specifically to develop new mathematical models for dealing with longitudinal data and to create some statistical tools for a particular study of the child's development of conceptual categories.
Importance, need, or justification:	Most of the methods now used for the analysis of data in this research area are extremely primitive. New ones are required for the acceleration of the systematic advancement of knowledge.
Method, strategy, or design:	Much of the work in this problem area is mathematical and statistical and requires the development of computer programs with illustrative analyses of existing data. Some of it, however, will require the collection of new data and the application to it of new methodological techniques.
Characteristics of the users and sample:	Sample: Preschool and primary grade children constitute the sample population in those phases of research in this program which relate to the generation of new data. Users: Users of the techniques developed will be research workers in the appropriate substantive fields.
Expected end products of results:	The speech and papers listed in the flow chart section below are the now-known end products of the research in Program VII.

Expected end products of results (Continued)	As additional results become known, corresponding reports will be planned and executed in accordance with the user audiences most likely to benefit.
Evaluation procedures:	The models being developed will be evaluated by confirmation of their utility or fit with real data.
Relationship to other center projects and center focus:	The concept development aspects of this program are related to several activities in Program II and collaborative efforts are underway between two groups of investigators concerned, spear-headed by Professors Wiley and Hass. In addition Program IV personnel, including Professor Jackson, have shared responsibilities within the Nursery School project with Professor Wiley and his associates. More generally, the development of new methodological tools is relevant to all of the centers within the National Laboratory as well as to the field at large.
Flow chart, time schedule:	During the present contract period, the following major vehicles of dissemination have been projected constituting a flow chart of progress points in the research activities: February, 1969--AERA paper on concept development in children over time April, 1969--Psychometric Society paper November, 1969--Draft of formal paper on longitudinal models
Linkages of activities within the program:	The development of statistical tools in the longitudinal study of concept development makes direct contributions to the model development in the other major program activity.

CORNELL RESEARCH PROGRAM IN EARLY CHILDHOOD EDUCATION

C-B

Title: Curriculum Development and Early School Learning

Principal Staff: Laurel Hodgden, Marion Potts, Herbert Ginsburg, W. Lambert Brittain, Principal Investigators.

Purpose, objective, or goals: Broad aims of this program center upon the assessment and analysis of a number of intellectual, learning, and problem solving processes and characteristics in preschool and kindergarten-age children as background for the development of curriculum materials and teaching strategies which can be geared to the "diagnosed" needs of individual children in preschool settings.

Importance, need, or justification: To develop effective curriculum materials and programs appropriate for preschool children, much more basic knowledge is needed concerning significant cognitive and learning processes as these operate in the classroom setting. At the same time, teachers need simple diagnostic techniques for assessing the status of individual children, along with closely related curriculum suggestions and guidelines. Systematic experimentation with specific methods for facilitating learning in particular areas, such as the development of syntactic structures, is also very much needed.

Method, strategy, or design: The four projects presently constituting this program involve.

A. Development of diagnostic procedures for use by teachers in assessing specific characteristics of preschool children, to be incorporated in a manual with specific curriculum and teaching

Method, strategy, or design (Continued)

suggestions, which will then be subjected to "field testing" by teachers.

B. An experimental comparison of several methods of teaching syntactic structures to disadvantaged four-year-olds.

C. An ecologically oriented analysis of reading, writing and verbal behavior in a "progressive" kindergarten setting, with heavy emphasis on detailed naturalistic observations.

D. Detailed observations of children's artistic behavior in structured preschool situations.

Characteristics of the sample:

Three-, four-, and five-year old children, Caucasian and Negro, mostly working-class and poor children, urban and rural; also some children from professional families; all enrolled in preschool programs of various sorts. Potential users of curriculum materials and techniques, diagnostic procedures, etc., are preschool and kindergarten teachers, teacher aides, preschool program administrators, etc.

Expected end products of results:

Technical research reports, reports for dissemination to early childhood education "consumers"; manual containing diagnostic procedures and teaching guidelines for preschool and kindergarten teachers; curriculum guidelines in regard to language training; observational and coding procedures for analysis of intellectual and learning activities in preschool settings.

Evaluation procedures:

See "Method" above, and project summaries.

Relationship to other center projects and center focus:

This program area represents one of three major foci of the Cornell Research Program in Early Childhood Education. While the major emphasis of this particular program is upon the analysis and facilitation of learning in preschool settings, it will eventually be necessary to examine the actual and potential inter-play between

Relationship to other center projects and center focus (Continued)	these school based programs and home tutoring programs at the same age levels (Project C-CA), and those which begin at earlier ages (Project C-CB, Program C-D).
Flow chart, time schedule:	See Project Summaries.
Linkage of activities within program:	While the four projects within the program were originally initiated as independent research endeavors, there are obvious over-lapping research concerns and interests which are beginning to be explored, beyond mere exchange of information among investigators. For example, some of Brittain's analyses of artistic behavior will be done in the rural kindergarten setting being created by Ginsburg, and will contribute curriculum guidelines for that setting. Similarly, Potts' language training project may well produce teaching suggestions which could be incorporated in Hodgden's teaching manual, etc.

CORNELL RESEARCH PROGRAM IN EARLY CHILDHOOD EDUCATION

C-C

Title: Analysis and Modification of Home Teaching Environments

Principal Staff: Margaret Parkman-Ray, Helen T. M. Bayer, John S. Harding, Principal Investigators; (4 research associates)

Purpose, objective, or goals:

1. To analyze more precisely the home learning environment of four-year-old children from isolated, rural, poor white families, and to develop home teaching programs aimed at improving mothers' effectiveness in facilitating the educational development of their children.
2. To develop and evaluate the effectiveness of home tutoring programs aimed at facilitating language development of two-year-old disadvantaged children through systematic story reading by teenage and adult story readers.

Importance, need, or justification: It is generally recognized that poor children living in isolated rural areas, and urban poor children from various ethnic minorities enter the public school system at a considerable disadvantage because of restricted opportunities for learning, intellectual, and language development in the home should facilitate young children's psychological development, and improve learning and performance in the school situation.

Method, strategy, or design: One study (C-CA) has focused on an analysis of the home environments of isolated rural poor white families through systematic interviews and observations of mother-child pairs in structured situations. A series of play materials, games, and other activities were then developed, and through a program of weekly home visits, they were introduced

Method, strategy, or design (Continued)	to and modeled for the mother and child, and left in the home. Effects of the program are to be compared for 12 experimental and 12 control families. A second study (C-CB) employs brief daily home visits by teenage or adult visitors who read story books and play language games with two-year-old children in order to stimulate language development and usage. Age and race of story readers, race and sex of children, and duration of reading programs are factors under investigation.
Characteristics of the sample:	Mothers and four-year-olds in isolated rural intact poor white families; also, poor children in Ithaca area age 17-33 months, about 60% Negro and 40% white.
Expected end products of results:	Program for four-year-olds; interview procedures, structured mother-child interaction situations, preliminary teaching materials, technical reports; program for two-year-olds; research reports, story reading "program package" which might be employed in other communities or action programs.
Evaluation procedures:	Pre- and post-program test data on treatment and control groups; coded observations of mothers and four-year-olds; interviews with mothers of two-year-olds, taped speech samples of some two-year-olds.
Relationship to other center projects and center focus:	See Program Summaries C-B and C-D, Project Summaries C-CA and C-CB.
Flow chart, time schedule:	See Project Summaries C-CA and C-CB.
Linkage of Activities within Program:	While the two projects consituting this program are both concerned with home tutoring or intervention procedures, they differ in regard to the age of target

Linkage of Activities within Program (Continued)

children, and in the type of intervention programs employed. Consequently, there has been relatively little interplay between the two projects thus far. Clearly, however, as the intervention procedures are more fully developed and evaluated, there will be need to examine the matter of optimal inter-meshing and continuity of home tutoring programs aimed at children over the age span from two to five years.

CORNELL RESEARCH PROGRAM IN EARLY CHILDHOOD EDUCATION

C-D

Title: Cognitive and Emotional Development in Infancy

Principal Staff: Henry N. Ricciuti, Principal Investigator; Robert Poresky, Research Associate; two research assistants

Purpose, objective, or goals:

1. To develop a conceptual framework and experimental procedures for more precise assessment of infants' emotional and orienting responses to a variety of stimulus situations, with particular references to developmental changes in responses to stimuli varying in incongruity or strangeness.
2. To explore the nature and stability of individual differences in such response characteristics, as well as their relationship to previous experience.
3. To investigate inter-relationships between emotional or arousal characteristics in the infant, and the development of learning, problem solving, and other cognitive behaviors.
4. Development of guidelines and procedures for facilitating infant development in specified functional areas, through systematic experiential modification.

Importance, need, or justification: There is great need for further understanding of the nature and development of emotional behavior in infancy, and of the manner in which such response processes interrelate with perceptual-cognitive and learning functions, both on a short-term and long-term basis. Clarification of the influence of previous experience on emotional response characteristics is important for theoretical reasons, and as background for environmental modification studies.

Method, strategy, or design: Initial studies focus on elicitation and analysis of a variety of emotional responses in infants, using systematically varied stimulus situations in the laboratory. Detailed analyses of TV tape recordings provide major behavioral data, while home visits and interviews provide data on previous experience and environment. Subsequent studies will involve primarily systematic laboratory-type assessments of infant behavior and "manipulation" of infant experience.

Characteristics of the sample: Initial studies focus mainly on middle-class infants, 3 to 15 months of age. Subsequent studies will employ samples of infants from more varied environmental backgrounds, including urban and rural poor families, and infants with history of malnutrition, from 3 to 24 months of age.

Expected end products of results: Rating and coding procedures for assessment of salient emotional response characteristics in infants; interview schedule for analysis of home environment and previous behavior patterns; technical reports; guidelines for programs aimed at facilitating infant development.

Evaluation procedures: See "Method" above.

Relationship to other center projects and center focus: Long term follow-up of sub-sample will permit examination of relationship of emotional characteristics observed in infancy to salient behavioral characteristics identified subsequently at preschool level. More generally, emotional response variables identified may be important as subject characteristics influencing differential response to intervention techniques aimed at modifying maternal teaching styles. Also, it may eventually be possible to examine optimal "meshing" of infant stimulation programs in group care settings with later home tutoring programs.

KANSAS CENTER FOR RESEARCH IN EARLY CHILDHOOD EDUCATION

K-A

Title:	Individual Differences in Infant Learning and Development
Principal Staff:	Frances Horowitz, principal investigator Lucile Paden, Kala Bhana (supported by KU grant), Elizabeth Boyd, Ronald Mann, Robert Aitchison, and Mary Ellen Mann
Purpose, objective, or goals:	To discover the modes and dimensions of environmental stimulation which are involved in early infant learning, to describe the amount and extent of stable individual differences in response to stimulation and to demonstrate the functional relationships which exist.
Importance, need, or justification:	This will help us understand early response acquisition, provide tools for individual assessment, and offer an avenue for prevention of some kinds of slow or retarded development.
Method, strategy, or design:	Longitudinal and cross sectional experimental manipulation of visual experience for purpose of getting visual preferences, fixation durations and strategies of infant control of stimulation.
Characteristics of the sample:	Infants 3-14 weeks of age in present study. Age will increase as study progresses.
Expected end products of results:	Assessment procedures for identifying individual response characteristics to stimulation. Procedures for enhancing responses of acquisition.
Evaluation procedures:	Will evaluate the knowledge in terms of whether or not it yields functional control over rate of response acquisition.

Relationship to other center projects and center focus: Relates to infant work at Cornell and Chicago. At Kansas, it relates to Etzel and Rosenfield interests. Longitudinals relate to all projects.

Flow chart, time schedule: Conclude checkerboard stimuli study by January, 1969. Start habituation study in December, 1968. Begin systematic intake of longitudinals January, 1969.

KANSAS CENTER FOR RESEARCH IN EARLY CHILDHOOD EDUCATION

K-B

Title:

The Use of Programming Procedures in the Development of Preacademic Intellectual Skills for Children 15 months to 5 Years

Principal Staff:

Dr. Barbara C. Etzel, principal investigator
Mr. Mike Mintz, research assistant
Mr. Wallace Dial, research assistant
Mr. Ken Scott, research assistant and electronic technician

Purpose, objective, or goals:

1. To develop through programming preacademic skills (guessed to be important for success in the first three primary grades) for children who do not demonstrate these behaviors.
2. To develop many assessment procedures for evaluating these skills and the generalization of the behavior.
3. To evaluate how well our guesses are for supplying the child with the appropriate preacademic skills when they have "graduated" to formal schooling.

Importance, need, or justification:

At present the usual solution for children who do not appear "ready" for first grade work is to have them repeat kindergarden or have them stay at home for an additional year. This solution is far from satisfactory. These children usually continue to have trouble during their school years. Once we know how to identify and teach these prerequisite behaviors in the preschool years, then primary school teachers should be able to teach what they are supposed to teach: beginning academics.

Method, strategy, or design:

All children in several preschool classrooms (from 15 months to 5 years of age) will be pre-tested for a given skill. One-half of

Method, strategy, or design (continued)	those children who do not possess the behavior will be programmed; the other half will receive only the teaching from the natural preschool classroom. The group programmed will be post-tested for the behavior and for generalization. The other group will be pre-tested again about one month before the end of the school year. Those who do not pass the pre-test will be programmed. This comparison allows us to see how much a child will receive from his natural preschool and home environment as compared to those receiving special programmed instruction.
Characteristics of the sample:	Preschool classrooms from both middle class and Head Start "types" will be used to test the efficiency of the programmed procedures for a variety of children and also to make comparisons regarding generalization of the behaviors between groups.
Expected end products of results:	The expected end product will be a variety of programmed procedures for teaching preacademic skills to preschool children. These procedures will include specific stimulus materials and instructions. Assessment procedures also include pre and post tests and evaluation of generalization. Finally, a further expected end product is the identification of certain pre-academic skills found to be functionally relevant for success in the primary grades.
Evaluation procedures:	All evaluations will be in the form of pre and post tests; tests for generalization; post tests for retention (memory); standard readiness tests during first grade; academic behavior during first three grades to include reading, spelling, writing, arithmetic, work papers, etc.

Relationship to other Center projects and Center focus:

The preacademic project will start at 15 months and part of the sample (longitudinal) will pick up from Dr. Horowitz's project. Successful preacademic skills will be used as an index for "postdicting" (blind) the behavior the child demonstrated during the infant project. The focus of the Center is also reflected in this project where behavior modification of preacademic skills is being studied and instigated.

Flow chart, time schedule:

September 1 to November 30: All children (N=40) in two preschool groups (one-half 3 year olds and one-half 4 year olds) were pretested for gross discriminations on a same-different (oddity) test. Of the seven Ss who "failed" the pretest, four were programmed and three are being held under the natural instruction of the preschool classroom until April of 1969. All other children have also received the test for generalization of gross differences; pretest for fine discrimination of the same-different problem; pretest for the generalization of fine discrimination of the same-different problem.

December 1 to May 31: Programming fine discrimination behavior on the same-different problem. Development of apparatus, pre, post, and generalization tests for two other preacademic skills: position abstractions (inside-outside; right-left; top-bottom) and discriminations of three dimensional geometric forms.

June 1 to August 31: Analysis of data on three projects and development of a fourth program.

September 1 to December 1: Testing of fourth program and routine testing and programming of first three programs on "new" Ss in preschool.

KANSAS CENTER FOR RESEARCH IN EARLY CHILDHOOD EDUCATION

K-C

Title: Studies of Language Learning and Language Competency

Principal Staff: Hayne W. Reese, Todd R. Risley, Montrose Wolf

This program includes the following three projects whose resumes follow:

1. Mnemonics in Paired-Associate Learning
2. Measurement of "Spontaneous Speech" Vocabularies of Poverty Negro and Middle Class White Preschool Children
3. The Role of Auditory Stimuli in a Remedial Reading Program for Primary Level Disadvantaged Children

KANSAS CENTER FOR RESEARCH IN EARLY CHILDHOOD EDUCATION

K-CA

Title: Studies of language learning and language competency: Mnemonics in paired-associate learning

Principal Staff: Hayne W. Reese, Principal Investigator
Drenda Farmer, Research Assistant

Purpose, objective, or goals: To study roles of visual imagery and verbal context in learning and retention of verbal materials.

Importance, need, or justification: There is evidence that the deficiency in learning by culturally deprived and intellectually deficient groups is largely attributable to failure to utilize efficient strategies or techniques of learning and retentive capacities. The research being undertaken is designed primarily to provide a baseline or framework against which such groups can be evaluated.

Method, strategy, or design: Every item is presented verbally and visually. In the two control groups the stimulus (line drawings of animals) and response items (line drawings of everyday objects) are presented as separate, isolated elements in both modalities. In Control Group I (which is the same as the control condition used previously) the stimulus item is presented, then after allowing the subject time to anticipate the response, the response item is presented. In Control Group II the procedure is the same except that after the anticipation interval, during which the stimulus alone is presented, the stimulus and response items are presented together.

In the Verbal Context Group, the pictorial materials and procedure are the same as in Control Group II, except that the verbal

Method, strategy, or design (continued)

presentation of the stimulus and response items after the anticipation interval is in the form of a complete sentence that describes an interaction between the stimulus and response items.

In the Imagery Group, the procedure is the same as in Control Group II, except that the visual presentation of the stimulus and response items after the anticipation interval is in a single picture showing an interaction between the stimulus and response items.

	Verbal	
Visual	Isolated Elements	Interaction
Isolated Elements	Control Groups	Verbal Context
Interaction	Imagery	----

In follow-up work, the nature of the interaction described or pictured will be varied (familiar-bizarre, for example), and the amount of detail included in the pictures of interaction will be varied (line drawings vs. composite photographs, for example).

It is anticipated that there will be no difference between the two control conditions. If there is not, then the first control condition will not be used in the follow-up work, since it is technically less adequate than the second control condition. If there is a difference between these two controls, then the initial follow-up work will be designed to determine the cause of the difference.

Characteristics of the sample:

Normal, middle-class preschoolers, deaf preschoolers, Head-Start type preschoolers.

Expected end products of results:

Body of knowledge about how learned material is stored in memory and retrieved from memory for use. It is possible that a standard test assessing the tendency to use efficient mnemonic systems spontaneously could be developed, but is doubtful that the project will progress to that stage in the first year or so.

Evaluation procedures:

Comparison of experimental and control conditions; comparison of different populations.

Relationship to other Center projects and Center focus:

a. Horowitz: The longitudinal sample will have a dossier from which information about the sensory and attentional capacities of individual children can be obtained. These may be correlated with type of mnemonic processing characteristically used by the child.

b. Etzel: It will be possible to identify individual children for whom the experimental group training is ineffective. It would be worthwhile to explore the possibility of developing individual programs in an attempt to "shape" the desired skill in mnemonic processing.

c. Risley: Norms obtained will provide a pool of language materials that can be used in the paired-associate learning task, with familiarity and frequency of usage held constant in middle-class and poverty groups.

d. Wolf: According to one theory of reading, the meaning of the material is "carried" by evoked imagery. There is, therefore, a direct parallel between the paired-associate conditions under investigation and the study ot the role of auditory stimuli in remedial reading programs. That is, in paired-associate learning,

Relationship to other Center projects and Center focus (continued)

the materials can be presented visually with and without simultaneous auditory presentation. If the results of these parallel investigations are parallel, one theoretical implication is that the inferior reading ability of some children reflects a failure of the printed material to evoke imagery, which is, however, evoked by auditory material. If found to be justified by the data, this conclusion would have wide implications for further basic research on paired-associate learning and also for remediation research.

Flow chart, time schedule:

	Study 1	Study 2	Study 3	Study 4
Sept.	Preparation			
Oct.	Data Collection	Apparatus Construction		
Nov.	↓	↓		
Dec.	↓	↓		
Jan.	↓	Data Collection		
Feb.	Data Analysis & Report	↓		
Mar.	↓	↓	Preparation	Preparation
Apr.		Data Analysis & Report	Data Collection	Data Collection
May		↓	↓	↓
June			↓	↓
July			↓	↓
Sept.			Data Analysis & Report	Data Analysis & Report
Oct.			↓	↓
Nov.				

Study 1: Replication Study
Study 2: Deaf Study
Study 3: Study of Variations in Visual Materials (follow-up of Study 1)
Study 4: Study of Variations in Auditory Materials

KANSAS CENTER FOR RESEARCH IN EARLY CHILDHOOD EDUCATION

K-CB

Title:	Studies of language learning and language competency: Measurement of 'Spontaneous Speech' Vocabularies of Poverty Negro and Middle-Class White Preschool Children
Principal Staff:	Todd R. Risley, principal investigator Betty Hart, Euenice Williams, Gayle Scriven, Kevin Lynch, Armando Dominguez
Purpose, objective, or goals:	Comparable recording and comparison of the vocabularies, grammar, syntax of the spontaneous speech, etc., of 12 middle-class preschool children enrolled in the K. U. preschools and 12 Negro poverty children enrolled in a preschool in a poverty area of Kansas City, Kansas.
Importance, need, or justification:	To detail aspects of language which differ between the two groups, thereby providing information relevant to language development programs for disadvantaged children.
Method, strategy, or design:	Daily, 15-min. verbatim records of each child's speech are obtained by observers while the children are engaged in free play during preschool. These records are transcribed onto IBM cards and analyzed, utilizing the K. U. computer. Comparison of the summarized data of the two groups will be made at the end of the preschool year.
Characteristics of the sample:	Twenty-four 4-year-old children: 12 white, middle-class, from university environs; and 12 Negro poverty children.
Evaluation procedures:	Detailed reliability measures of language records obtained by occasional simultaneous observations of individual children by two observers. All observers at either preschool will simultaneously observe with each other observer several times during the year.

Relationship to other Center projects and Center focus:	This study fits in with the general orientation of the Center with regard to experimental analysis of behavior modification. Portions of the longitudinal population used in other Center projects will be studied with reference to vocabulary, grammar, syntax and other related aspects of language acquisition and development.
Flow chart, time schedule:	Speech samples of all children in both groups have been obtained each preschool day (except absences) since September 23. For reliability measures, approximately 50 simultaneous observations have been made by pairs of observers within each preschool and 12 have been made by pairs of observers, from the two preschools. Transcription of data and computer summarization are proceeding on schedule.

KANSAS CENTER FOR RESEARCH IN EARLY CHILDHOOD EDUCATION

K-CC

Title:	Studies of language learning and language competency: The role of auditory stimuli in a remedial reading program for primary level disadvantaged children
Principal Staff:	Montrose Wolf, principal investigator Betty Jean Chaney and Mike Davis, research assistants
Purpose, objective, or goals:	To develop and evaluate a reading program, including supplemental auditory assistance, for teaching reading to primary level disadvantaged children.
Importance, need, or justification:	Disadvantaged children generally are retarded in reading ability. A better method of teaching these children to read is essential.
Method, strategy, or design:	A combination of experimental-control groups and baseline strategies will be used.
Characteristics of the sample:	Primary grade children from low-income families in the poverty area of Kansas City, Kansas.
Expected end products of results:	a. An understanding of the role which auditory assistance can have in a reading program. b. A reading program and method of presentation.
Evaluation procedures:	An experimental group and a comparison group will be given pre and post achievement tests. Both groups will also be given repeated (weekly) forms of the CAT achievement tests to establish a stable pre-treatment baseline and comparison baseline against which progress in the experimental group can be based.

Relationship to other Center projects and Center focus:	This research has several dimensions which relate to the Center. It represents research in the role of auditory assistance in programmed instruction; assessment of characteristics of disadvantaged children; programmed reading.
Flow chart, time schedule:	a. September 1968-December 1968: Program development and apparatus construction. b. January 1969-September 1969: Experimental and control subjects pre-tested, run in the program and post-tested. c. October 1969-November 1969: Data analyzed and the final report written.

KANSAS CENTER FOR RESEARCH IN EARLY CHILDHOOD EDUCATION

K-D

Title:	Acquisition and Performance of Regulatory Social Responses
Principal Staff:	Howard Rosenfeld, principal investigator John Trewolla, technical assistant Pamela Gunnell, Dick Levin, research assistants; Virginia Sullwold, NIMH trainee
Purpose, objective, or goals:	a. Design, select and purchase semi-portable closed-circuit television equipment to permit video-taping of facial and gestural responses of developmental sample during social stimulation and interaction. b. Design of laboratory apparatus for presentation of social stimuli to infants (in conjunction with video-taping). c. Exchange of information with other investigators performing related work, in national labs and elsewhere. d. Develop experimental criteria for determining the regulatory (interpersonal control) functions of nonverbal responses in social interaction.
Importance, need, or justification:	The above goals define the initial stages of designing facilities necessary for the scientific analysis of social behavior development.
Method, strategy, or design:	At this time, first quarter funds for equipment have been put to bid, contacts with other laboratories have been made and useful information exchanged, initial plans for experimental practice TV films of infants have been made with borrowed equipment and an experimental procedure for detecting nonverbal regulators has been developed.

Characteristics of the sample:

Infants for practice filming have been recruited by convenience, and where possible in conjunction with Dr. Horowitz's infant laboratory. Other subjects at both adult and preschool levels are being used to round out the developmental continuum in establishing experimental criteria for determining the regulatory functions of nonverbal responses in social interaction.

Expected end products of results:

The equipment ordered is expected to be bid upon and purchased, and to be used immediately upon acquisition in the nonverbal regulation studies. It will be applied to infants when the infant laboratories are completed this winter. In the interim, we expect to make progress in the development of a functional code for the categorization of nonverbal behavior.

Evaluation procedures:

Our evaluation procedures will consist in statistical tests of the reliability of empirical relationships obtained through the experiments.

Relationship to other Center projects and Center focus:

The regulatory analyses of nonverbal behavior constitute a unique theme, but one that will be complementary to other studies of social behavior--particularly the language studies--and will contribute to a comprehensive analysis of infant development when used in collaboration with the infant projects.

Flow chart, time schedule:

The procedures listed under "Method" above describe the project activities for the first quarter relative to the purposes listed under "Purpose" above. The first quarter goals have been met. By the end of the second quarter, the equipment ordered should be used in initial infant and interpersonal studies described above and the remainder of the laboratories should be designed, put out to bid, and at least partially in operation. By the end of the second semester, TV tapes should be ready for formal analysis with the aid of computer programs.

KANSAS CENTER FOR RESEARCH IN EARLY CHILDHOOD EDUCATION

K-E

Title: A study of the ecological reinforcers of the preschool environment

Principal Staff:
Dr. Donald M. Baer, principal investigator
Miss Trudy Lee Rowbury, research assistant
Mr. Graeme Blasdel, research assistant

Purpose, objective, or goals: To discover to what extent the materials of the preschool environment have within themselves reinforcing functions which can maintain and guide a child's play or construction with them. In particular, it is desired to know whether preschool materials not only are capable of maintaining play behavior in themselves, without extrinsic social reinforcement or instruction, but also can in fact teach the child something about environmental relationships through this play: the law of gravity, the principles of leverage, the technique of two-dimensional representation of three-dimensional reality, etc. By materials is meant such things as blocks, dolls, art materials, puzzles, manipulative toys, etc.

Importance, need, or justification: The importance of this project lies partly in the fact that the teaching functions of preschool materials have rarely, if ever, been examined experimentally, either as teachers or as stimuli capable of maintaining a respectable rate of child interaction with them (independent of teacher intervention). It is thus valuable to the field of early childhood education to know to what extent such materials in fact will maintain child behavior, in what ways child behavior may change as a consequence of this interaction with the materials. In addition, the project has importance because it may show how teacher intervention can *make* preschool materials

Importance, need, or justification (continued)

into behavior-sustaining, teaching media, if early research fails to show any inherent function of this sort without such pointed teacher intervention. Thus, if these materials teach, let us examine how and what; if they do not, let us examine ways to allow them to. Intrinsically, these materials contain many valuable lessons for children to learn--the problem is to discover how to get these lessons taught optimally.

Method, strategy, or design:

The primary experimental method is to use social reinforcement from teachers to develop rates of play with selected materials in children not showing such play initially. Teacher reinforcement will be discontinued from time to time, to see if the child's rate of play with these materials will continue to depend upon such reinforcement, or if he will, in time, become an autonomous player with the materials. In either case, the products of his play will be scored in various ways, to see what development of play may result from his maintained rate (whether intrinsically or extrinsically maintained). Different types of development may be seen during extrinsically maintained play than during intrinsically maintained play. If no development is seen after a reasonable period of time (e.g., several months of several-times-a-week play), teacher reinforcement will be pointed toward specific types of play. For example, with blocks, teachers may selectively reinforce vertical building rather than horizontal, for a period. Then, selective reinforcement will be discontinued, to see if its effects are maintained without it, and to see if now, new developments in the child's play will manifest themselves. If not, a different tactic of selective teacher reinforcement will be applied, in a continuing attempt to find some simple way of promoting a kind of interaction between child and material which will lead to spontaneous expansion of his

Method, strategy, or design (continued)	interaction with that material, in ways which could prove valuable to his current and future development--especially, his educational development.
Characteristics of the sample:	The sample will consist of preschoolers, middle or poverty class, who show low or zero rates of interaction with specific materials of the preschools (or all the materials of the preschool). No other characteristics are presently known to be necessarily involved in the sample available and desired.
Expected end products of results:	The expected end product is a tentative identification of certain preschool materials as maintainers of child play with them, others as less clearly this, others as not at all. Some materials, further, may be identified as capable of producing certain elaborations (i. e., certain teachings) in the behavior of children who play with them at length; others may not. Possibly, some ways in which teacher reinforcement can aid certain materials in leading to such behavioral elaborations, through directed play with identified materials, will be discovered and be describable as teaching techniques for other teachers to use toward the same goals.
Evaluation procedures:	The child's behavior, and the nature of his play products, is currently observed as it occurs, being recorded in a variety of categories such as time in play, number of play movements during play, number of material-pieces used, height, width, length, etc., of the product; furthermore, photographs of the finished products are taken, and can be rated for other characteristics (yet to be decided at this stage of the research: perhaps "complexity," "novelty," or "symmetry"). Most of these observation techniques and their resultant scores have proven to be highly reliable so far; as others are developed, they will, of course, be subjected to

Evaluation procedures (continued)

intensive examination for psychometric reliability, as well as relationship to the experimental variables of the study.

Relationship to other Center projects and Center focus:

This project relates to other Center projects as an example of an investigation into the conditions under which children learn, especially as they learn the lessons of special significance for early childhood education. In that it examines behaviors for their eventual independence from extrinsic reinforcement, it relates to those projects which are interested in highly durable patterns of child behavior (or, conversely, those projects interested in the lack of durability of child behavior). Thus, it may serve as an explanatory tool for apparently autonomous traits of children; and it may serve as an example of a technology to accomplish such apparent autonomy, when it is desired.

Flow chart, time schedule:

Currently, the rates of block play maintained both under social reinforcement from teachers, and without such reinforcement, are under study in two children, one a normally high-rate, skilled user of blocks, the other a previously zero-rate block builder. Within two months (approximately), it is expected that both children will have been systematically exposed to social reinforcement and discontinuations of reinforcement repeatedly enough to show their respective response to, and dependence on, this reinforcement for maintenance of their rates and qualities of block play. That comparison will be replicated with other similar pairs, probably within another two months. By the end of the year, it is expected that it will be clear whether initially low-rate block builders can be made independent of teacher reinforcement in their block play, and whether any development of that block play can be seen as it is maintained. The other questions posed above probably can be approached only by the following year.

PEABODY DEMONSTRATION AND RESEARCH CENTER FOR EARLY EDUCATION

P-B

Title:	Intervention Studies
Principal Staff:	C. Barbrack, M. Bransky, I. Buhl, D. Butler, B. Forrester, R. Giesy, B. Gilmer, S. Gray, B. Hardge, D. Horton, D. Wickens
Purpose, objective, or goals:	To improve educability of young children through devising and testing empirically intervention techniques which can be replicated and which are feasible from the standpoint of cost efficiency and the maximum use of less-trained personnel. The specific emphasis of the majority of the projects in this program is concerned with training mothers to make them more effective educational agents for their children.
Importance, need, or justification:	Within the flood of intervention approaches a conspicuous lack is that of precisely defined intervention approaches, carefully documented and evaluated over time, both with children, parents, and other persons living in contiguity. We have been for some years and are continuing to attempt to devise more precisely defined and more adequately validated intervention programs.
Method, strategy, or design:	We have attempted massive intervention over time, for which we have tried to specify a set of variables that seemed to effect long term improvements in educability. In general, these interventions have centered around attitudinal factors and aptitude variables for mother and child. Of particular interest in the child have been attitudes relating to achievement as achievement motivation, persistence, identification with and achieving role model, development of independence and internalized

Method, strategy, or design (Continued)

motivational, systems. For mothers we have been concerned with the mother's general ability in planning and organizing her life, the development of an effective teaching style with her child, and the imparting to her of a more adequate knowledge of the steps involved in enabling her child to succeed in school. Some other characteristics of our general strategy are as follows:

1. The use of non-professional personnel trained on one project to train workers on another project (cf. the Mother Home Visitor Study).
2. An attempt to keep close to treatments involved in a particular study. Large samples in many settings often attenuate so-called innovative treatments so much that little residual is found for appropriate comparisons of contrasting treatments.
3. The general evaluation design has been one of pre, interim, post, and follow-up tests with contrasting treatment groups, varying from single comparisons of an experimental and control group to that of comparing four treatments.
4. A concern with diffusion effects both within a family and among persons living in physical propinquinty.
5. Long term follow-up of the subjects involved in intervention treatments.

Characteristics of the users and the sample:

Sample: Low income parents and children (rural and urban), plus middle class comparison groups. Comparisons are made of white and Negro groups, with some limited work with other ethnic groups.
Users: Other research personnel interested in intervention approaches, preschool public school programs, welfare and programs designed to enhance the skills of paraprofessionals, Head Start programs, Parent-Child centers.

Expected end products of results:

1. It is anticipated that evidence of vertical diffusion will be observed. This should result in improved academic patterns for young children.
2. Increased effectiveness in training para-professionals (including manuals and programs).
3. Improved techniques in maternal teaching practices.
4. Home Visitor Programs (materials and instruction) to be used with mothers and young children. In short,
5. More thoroughly validated and precisely defined intervention programs, including a series of curriculum manuals (cf. Support Activities Program; Curriculum and Materials Development Project).

Evaluation procedures:

These have been discussed under "Methods." In general, four different assessment approaches are being used:

1. Tests of general aptitude pre, interim, post, and follow-up.
2. Test of specific abilities toward which our intervention programs are directed (some locally developed; cf. Project on Development of Assessment Instruments under Program: Supportive Activities).
3. Concrete evidence of changes in performance on part of parents ("life style changes").
4. Interview data (with parents) directed toward the assessment attitudes related to child's educability and their own life style and potentials for change.

Relationship to other center programs and center focus:

At DARCEE:

1. New intervention programs are planned in part on some of the findings of Program: Individual Characteristics and Program: Ecological Studies.

Relationship to other center programs and center focus (Continued)	2. The intervention program suggests new basic research questions which need answers. The Program: Supportive Activities is intermeshed in at least three ways: a. Much of our dissemination efforts have centered around our intervention approaches, particularly with visitors. b. The assessment program provides input for intervention needed. c. Much of our curriculum effort stems from the intervention studies.
Flow chart, time schedule:	Attached.
Linkages of activities within the program:	Cf. "genealogy" chart.

PEABODY DEMONSTRATION AND RESEARCH CENTER FOR EARLY EDUCATION

P-C

Title: Ecological Studies

Principal Staff: Maxine Schoggen, Melanie Sweeney, Ellen Brown, Margaret James, JoAnn Poole

Purpose, objective, or goals:

To study the impact of the social environment on three-year-old children in three groups, Urban Low Income, Rural Low Income, and Urban Upper Income homes. Particular emphasis will be placed on the input to the child from the mother.

Importance, need, or justification:

The current emphasis on early education and intervention suggests that early experiences of the child are of extreme importance. Little is known about the actual behavior of mothers toward their young children. The present project attempts to make inroads into this gap by collecting a pool of specimen records of the behavior of three-year-old children in homes together with the behavior of others in the home toward the child. The goal of all analyses is to specify differences and/or similarities in the impact of the social environment on the child among the children in the three groups mentioned.

Method, strategy, or design:

The specimen record of behavior is the raw material of the study. Analysis will be made of the Environmental Force Units (EFU), i.e., every action by agents in the environment

1. Vis-a-vis the child
2. With an end-state for the child stated or implied by the behavior of the agent
3. Which is recognized by the child.

Some analysis will also be made of episodes of the child's own behavior. The population groups will be compared on the analysis

Method, strategy, or design (Continued)	of the EFU. Further, objective ratings of the home environment will be made which will allow the families to be rank ordered across groups. Analysis of the EFU of mothers can then be correlated with a rank ordering of a composite rating which combines the Objective Home Environment scale with a Socio-Economic-Education scale.
Characteristics of the sample:	Eight, three-year-old children from each of three Socio-Economic-Income groups, Low Income Urban, Low Income Rural, and Upper Income Urban, comprise the sample. The twenty-four children come from families which have from two to ten children. The Low Income Rural families are all white. Half of the two Urban groups are Negro families. Effort has been made to match number of siblings, and position of the child in the family across groups. There has been some success in this which is, however, probably inadequate for a matched-pairs design. Each child will be observed for a total of approximately 200 minutes spread over eight observational periods.
Expected end products of results:	The groups can be compared as to such things as Rate of EFU, Percent of EFU with siblings as agents, Percent of EFU with mother as agent. The analysis of the content of the EFU, analyzed via a behavior coding system, will also be made across groups. It is also anticipated that the composite rating, mentioned earlier, may relate to some facets of the analysis of the behavior of mothers to their children.
Evaluation procedures:	The data analysis should indicate whether the method is fruitful for this kind of investigation. Other evaluation is not planned.

Relationship to other center projects and center focus:

Input and Output to other parts of DARCEE have been characteristic of this program since its inception. For example, the idea of home organization variables has been an outgrowth of, and feeds into, the mother-home visitor studies. A projected handbook of excerpts from specimen records, designed to aid in the training of paraprofessionals engaged in preschool or early elementary school work will be tested in the training situation and revised according to this experience.

The specimen records can be viewed as a pool of raw materials from which other centers might draw.

Additionally, some of the content analyses lend themselves to comparison with the Teaching Styles of Shipman and Hess and the APPROACH method of Bettye Caldwell.

Flow chart, time schedule:

Attached.

Linkages of activities within the program:

The Program consists of only one project, Study M, Reinforcement Patterns in the Home Life of Deprived Children in Urban and Rural Areas.

PEABODY DEMONSTRATION AND RESEARCH CENTER FOR EARLY EDUCATION

P-D

Title:	Individual Characteristics
Principal Staff:	B. Gilmer, C. Mumbauer, J. Aldous
Purpose, objective, or goals:	To increase understanding of the development of cognitive and social functioning of young children, especially as influenced by particular environmental factors relating to family and home.
Importance, need, or justification:	Present research indicates that the life style of the family has an effect on the intellectual functioning and social adjustment of the child. If education is to be improved, it is necessary to uncover the pertinent variables that influence the child's ability to perform. Amelioration of the situation that mitigates against the disadvantaged child can come only through the use of principles based on relevant research.
Method, strategy, or design:	Especially designed interviews and rating scales are being used to assess environmental organization of the home and perception of the children regarding the role of the parent. Also, disadvantaged and advantaged children will be compared with regard to effective functioning and under various experimental conditions.
Characteristics of the sample:	The sample will consist of children ranging in age from four years old to middle childhood. Both Negro and white children from various socio-economic strata will be used for comparison purposes. One portion of this sample will consist of mothers of children in the DARCEE Early Training Centers.

Expected end products of results:	The development of curriculum and intervention methods could be greatly facilitated by knowledge of the relationship of environmental factors to social and conceptual development. More appropriately designed educational procedures would be possible employing information of this type. At least one scholarly paper will appear in an appropriate journal.
Evaluation procedures:	Pre- and post-test will be administered and appropriate comparisons will be made. Quantification wherever possible will provide data for statistical procedures to evaluate the effects of various treatments. Replication of Study J, Adult Roles, in Another Country will provide information for cross cultural comparisons.
Relationship to other center projects and center focus:	This research will generate information regarding the development of cognitive and social functioning in young children. Any program dealing with the education of young children should find the results useful. Intervention and curriculum programs stand to benefit from this research.
Flow chart, time schedule:	Attached.
Linkages of activities within the program:	As stated in Importance and Relationship sections.

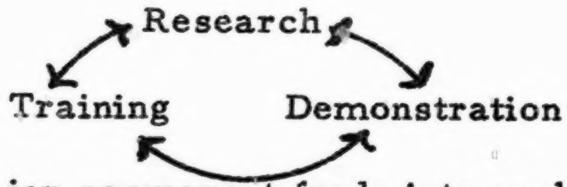
PEABODY DEMONSTRATION AND RESEARCH CENTER FOR EARLY EDUCATION

P-E

Title:	Supportive Activities
Principal Staff:	R. Wilcoxon, G. Mann, B. Gilmer, J. Camp, J. Miller, I. Buhl
Purpose, objective, or goals:	The general purpose is implied in the title of this program. It serves, through the dissemination activities, to tie together the various projects and to disseminate them to a large and varied group of professionals and non-professionals; it serves to supply major research needs across the several projects, particularly in terms of instrumentation.
Importance, need, or justification:	The dissemination project and that of curriculum and materials serve largely as communication vehicles to disseminate our products to a wider range of persons both through technical and specific reports to make replications and adaptations possible in other settings and through publications aimed at a more general audience. Other supportive activities are directed at taking care of certain cross-project needs.
Method, strategy, or design:	Since this characterization is somewhat inappropriate for supportive activities, instead, the role of supportive activities which relate to extra-DARCEE personnel in the overall strategy of the total DARCEE program is presented here. DARCEE has three important components: research, training, and demonstration. Most of the research is supported by OE and some of the demonstration. OEO contributes some funds to research, supports the training operation almost in its entirety, and supports approximately one-half of the demonstration endeavors. The general approach we have taken does not follow a

Method, strategy, or design (Continued)

linear model: research--demonstration--training. To attempt to cut down on the decades of lag between research and practical application, we have instead conceptualized our overall strategy as a circular one thus:



Each major component feeds into each of the other two and also draws from them. In this way research is put into training immediately in our own operation, it is conveyed to the demonstration component and each of the two latter in turn contribute to the research component and to each other. It might be added parenthetically that we consider our career training program one of the most effective ways to shorten the gap between research and training--if we can train persons who can and do assume leadership roles.

Characteristics of the users:

These fall into roughly four categories:

1. Students in training
2. Professionals in early education at all levels from classroom teachers to the national director of infant school for one of the British Commonwealth Nations
3. Educational and psychological researchers
4. Persons involved in social and political action

We have been particularly concerned with the preparation and distribution of materials suitable for Congressmen, community leaders, and national, state, and local groups concerned with public welfare, especially as it relates to young children.

Expected end products of results: Cf. flowchart. For this program the chart presented is a timetable of expected products.

Evaluation procedures: For the assessment project evaluation procedures are built into methods of validating the tests, first on our own sample, and later with extra-DARCEE groups. Since our curriculum approaches are basically the preparation of already validated approaches and materials, further evaluation will largely consist of efforts to keep up with groups who use these materials and to take advantage of what evaluation procedures they are using or that we can jointly work out. Our general demonstration and dissemination efforts are evaluated largely in terms of the general demands for publications as categorized by users and careful records of visitors to our centers and their stated concerns when visiting.

Relationship to other center projects and center focus: Dissemination activities are related to all other DARCEE concerns in the obvious way of being the general path by which findings and products are communicated to others. The curriculum and materials work grew largely out of our intervention studies. The assessment project is most heavily used in the intervention studies but also supports the individual characteristics program. In turn the intervention, the ecological, and the individual characteristics programs set new problems for the assessment project.

Flow chart, time schedule: Attached.

Linkages of activities within the program: Included in "Relationships" section.

SYRACUSE CENTER FOR RESEARCH AND DEVELOPMENT IN EARLY CHILDHOOD EDUCATION

S-A

Title: Analysis of Cognitive Behaviors

Principal Staff: J. Wilson, W. J. Meyer, V. Hall, M. Andrews, D. Smothergill

Purpose, objective, or goals: To examine, from a number of theoretical viewpoints and methodological strategies, the cognitive capabilities of four-year-old children. A second purpose is the development of curriculum programs suggested by the research findings.

Importance, need, or justification: Although there are many approaches to fostering the cognitive growth of four-year-olds, it is unclear why these programs are successful (not successful). Specifically, at the present time there is an insufficient understanding of cognitive processes that produce generalizable behaviors. This program is an effort to further understanding of developing cognitive processes.

Method, strategy, or design: The overall program strategy involves three stages, two of which occur simultaneously. Initially, studies will be conducted which will be relatively narrow in scope; that is, they will involve one or two variables. Procedurally, these studies will use laboratory methods as well as direct observations of behavior in relatively well defined classroom situations. Second, as techniques become apparent from the research studies, they will be developed and used in small groups (N = 5) and thus, if feasible, larger groups (N = 10-18). Second stage studies are also currently underway where the procedures are defined by the teachers; that is, the teachers are now engaged in defining objectives and developing materials and methods for attaining these objectives. The Quantitative Concepts project is also

Method, strategy, or design (Continued)

in stage two. The third stage involves 9 more generalized large scale field testing of the more promising techniques. At the present time, the Language Development project is consistent with the phase three definition.

Characteristics of the sample:

The projects involve children from the Laboratory Nursery School. These children are representative of the middle-middle class and will attend kindergarten in the same school district. A second large population used in this program are representative of the "inner-city."

Expected end products of results:

The following end products are anticipated:

1. Technical research reports
2. Relatively precise descriptions of the cognitive competencies and deficiencies of four-year-old children
3. A field-tested program for fostering language development
4. A field-tested program for teaching the mathematical concepts of equivalence, greater than, less than
5. A field tested program for fostering perceptual-motor development
6. A description of what cognitive abilities are fostered by various nursery school classroom materials.

Evaluation procedures:

These are described in the description of the program: Longitudinal Evaluation.

Relationship to other center projects and center focus:

The Longitudinal Evaluation Program derives much of its emphasis from this program. Thus knowledge gained from the research projects will be incorporated into the specific evaluation techniques. These techniques in turn will be used to evaluate the classroom programs. The Social-Emotional Program is also related to this program. Specifically, the projects in this program will develop procedures for reducing the fear-producing qualities of certain aspects of the learning situation.

Flow chart, time schedule: Attached.

Linkages within program: Each of the projects is concerned with a different class of cognitive behavior and with somewhat different strategies for fostering development. The relationships among the projects exist because each relies on appropriate orienting behavior, understanding of concepts transmitted through language, and specific cognitive characteristics of the children.

SYRACUSE CENTER FOR RESEARCH AND DEVELOPMENT IN EARLY CHILDHOOD EDUCATION

S-B

Title:	Social Emotional Development
Principal Staff:	C. Schwarz, W. J. Meyer, D. Smothergill
Purpose, objective, or goals:	To study the social and emotional responses of children in the nursery-school, children in the context of school situation, and to explore procedures which may foster social-emotional growth.
Importance, need, or justification:	An important aspect of child growth and development involves the ability to cope with emotional states and to learn appropriate social responses and social rules. The projects in this program focus on the variables influencing these developmental changes and examine a procedure for fostering social-role learning. Much of this work examines largely unexplored domains of child development and should contribute to understanding of this component of behavior.
Method, strategy, or design:	The general program strategy is to assess the variables that stimulate emotional, as measured by physiological monitoring systems, responses. The experimental situations are pseudo-realistic and are designed to arouse emotional responses. As these variables are identified, an effort will be made to discover variables which will modify emotional reactions. One project will assess, using observational procedures, the relevance of "dress-up corners" in the learning of social roles.
Characteristics of the sample:	The children employed in this project come from both the lower- and middle-classes. The potential users of the program outcomes would certainly include early childhood educators as well as those individuals concerned with understanding the social-emotional development of young children.

Expected end products of results:	Many of the final products derived from this program will be in the form of technical reports in appropriate professional journals. One of the projects (Parent-Child Separation at Preschool) may indicate that current practices of focusing on separation may be inappropriate.
Evaluation procedures:	These are described in the program section "The Longitudinal Evaluation Program."
Relationship to other center projects and center focus:	The projects may provide an awareness of how emotional reactions to school situations can be avoided, thus permitting greater opportunities for cognitive growth.
Flow chart, time schedule:	Attached.
Program findings:	The projects being conducted by Dr. Schwarz are concerned with varying aspects of variables influencing affective arousal. Each of the three projects will provide complementary data for the other projects and a more complete understanding of emotional reactions among young children. The project directed by Drs. Meyer and Smothergill have no direct relationship to each other or to those of Dr. Schwarz.

SYRACUSE CENTER FOR RESEARCH AND DEVELOPMENT IN EARLY CHILDHOOD EDUCATION

S-C

Title:	The Longitudinal Evaluation Program
Principal Staff:	W. J. Meyer, M. Andrews, V. Hall, J. Wilson, C. Schwarz, B. Caldwell
Purpose, objective, or goals:	To develop new assessment procedures and to evaluate the impact of the various intervention procedures.
Importance, need, or justification:	The intervention procedures used in the various projects are somewhat unique, thus requiring somewhat different assessment procedures. There is also reason to believe that current techniques for assessing cognitive development are inadequate in many respects. This program will attempt to improve methods for assessing both cognitive and social-emotional development.
Method, strategy, or design:	A variety of methods are being employed by the individual investigators as they seem appropriate to the particular problem. These strategies and methods are described in the individual project resumes.
Characteristics of the sample:	The evaluation procedures for the Language Project are being developed with a sample of "inner city" children. The APPROACH procedure has been largely used with the Laboratory Nursery School children. At this time, the measure of Mathematical Concepts has been used with the lab population but during Fiscal 1969, it will be used with inner-city youngsters. The Preschool Achievement Test has been used with diverse populations. Thus, in the long run, this program should produce techniques applicable to diverse populations.

Expected end products of results:	Procedures for assessing the cognitive and social-emotional development of children. These procedures will be pretested and, where appropriate, norms will be available.
Evaluation procedures:	Appropriate psychometric procedures for establishing reliability and validity will be employed.
Relationship to other center projects and center focus:	Clearly, each of the projects in this program relate directly to all other projects. With the exception of the APPROACH project, each evaluation project derives directly from a specific project in the other two programs.
Flow chart, time schedule:	Attached.
Linkages:	Three of the projects (Preschool Achievement Test, Language Assessment, and the Measure of Mathematical Concepts) concerned with related aspects of cognitive growth. The Color Attribute Index may possibly relate to the cognitive measures, but the theoretical relationships have not yet been defined.

APPENDIX 8

PROGRAM SUMMARIES OF RESEARCH AND DEVELOPMENT PROGRAMS INCLUDED IN CURRENT ANALYSIS

148/149/150/151

Georgia Research and Development Center in Educational Stimulation

Title: Language Arts and Verbal Learning

Principal staff: Ira E. Aaron, Robert L. Aaron, Elizabeth Aderhold, Jerry Allen, James Alsobrook, Kathryn Blake, Milton Blue, A. Byron Callaway, Bettye Jennings, Albert Kingston, Eleanor Ladd, George Mason, Editha Mills, Richard Rystrom, Andrew Shotick, Hazel Simpson, Rachel Sutton, Murray Tillman, Mary Tingle, Ramon Veal, Wendell Weaver, Charlotte Williams.

Purpose, objectives, or goals: The overarching objective of the program is to develop language arts and verbal learning programs of educational stimulation which can produce in children earlier mastery of receptive and expressive communication, both oral and written.

In order to achieve this objective several sub-objectives must be achieved. These include:

1. Development of a structured, sequential oral language curriculum.
2. Development of a structured, sequential reading curriculum.
3. Development of a structured, sequential writing curriculum.
    a. Handwriting and spelling
    b. Composition
4. Determining, with new or existing measures, baselines, or present levels of expected performance.
5. Determining whether these levels can be changed by educational stimulation.

6. Evaluating elements of instruction (such as manner or rate of presentation) as effectors of change in performance level.

7. Evaluating the effect of curriculum elements (such as amount of pupil activity provided) on pupil performance.

8. Evaluating effect of each curriculum upon the others and modifying curricula to increase positive intereffect.

Importance, need, or justification:

Earlier mastery of oral and written communication is essential for children to increase their capabilities for cognitive learning in a school setting. If early and continuous stimulation is to pave the way for the establishment of new educational norms, earlier mastery of language must be developed.

Method, strategy, or design:

The strategy employed for implementing the Language Arts and Verbal Learning Program has three parts. First, baselines for the

1. oral language production and comprehension

2. reading and writing performance

of young children are being described. Second, programs of early stimulation are being field tested and revised on the basis of formative and summative evaluations. Third, research is designed to provide the knowledge needed to improve program elements.

Characteristics of Users or the Sample:

Several samples are required for the three parts of the program. Some of these samples are chosen for pilot testing, baseline data collection, or related research studies. Field center samples are generally selected for long-term testing of the Center's early and continuous stimulation hypothesis.

Expected end products or results:

The end products are natural outcomes of the three-part strategy of the Language Arts and Verbal Learning Program:

1. Baseline data of kinds not previously available;
2. Instructional programs;
3. New knowledge about the teaching and learning of language arts.

Usefulness of findings, end products, or results:

The instructional programs available at this writing have already demonstrated their effectiveness with a limited sample. These programs promise to improve the effectiveness of many schools in meeting the need for more precisely structured programs for primary grade children. The baseline research and program element research should be helpful to other curriculum developers in addition to helping present curriculum developers in Language Arts and Verbal Learning.

Relationship to prior Center projects, other Center programs/ projects, and the focus of the Center:

Since all Center projects and programs involve verbal instruction and reinforcement, all are to some extent dependent upon the Language Arts and Verbal Learning Program. Similarly, since nearly all communication is about topics other than communication itself, facility in language is dependent upon knowledge and vocabulary developed through instruction in other cognitive areas.

As yet, the field tested Reading and Writing Exercises are not emphasizing communication about such subjects as science, mathematics, and social studies. However, the first few lessons in the handwriting program were written by personnel from the Art Program. Furthermore, many lessons in the Oral Language Exercises are included at the request of personnel in the Mathematics Program. Finally, one lesson in the Reading Exercises is being used as the introduction to a set of mathematics exercises which logically follow it.

All of this is within the focus of the Center which is to "probe the limits of school learning."

Georgia Research and Development Center in Educational Stimulation

Title: Mathematics

Principal Staff: Joseph R. Hooten, Michael Mahaffey, William McKillip, Len Pikaart, Edith Robinson and Leslie P. Steffe

Purpose, objectives, or goals: The major objectives of the Mathematics Program are:

1. To develop new materials to probe the limits of cognitive learning in mathematics
2. To trial test these materials
3. To evaluate pupil progress

In addition, the Program will continue research related to the mathematical behaviors of children that determine predispositions to learning in order to insure the broadest possible base for curriculum design.

For the pre-primary math programmatic activities, specific objectives have been defined stated in terms of anticipated pupil abilities at the end of a three year structured program of instruction. These objectives, filed with Center management, are divided into major mathematical topics: set, number, relations, operations, numeration, problem solving, sentences and proof, geometry, and measure.

Importance, need, or justification: This Program has been developed on the assumption that the emerging trend to place children in a structured school situation at an early age, three, four, or five will tend to become a national pattern. Thus, there exists a positive need to establish, through the research process, what curricular patterns in mathematics offer the most likely promise of stimulating accelerated learning in that subject.

Method, strategy, or design:

The Program, as presently conceived, will continue through June 30, 1969. The present organization is one of using several independent but correlated research studies.

As of July 1, 1968 multiple projects will be terminated and all subsequent activities correlated into one project entitled, "Curriculum Design and Evaluation in Mathematics for Children Ages Three Through Eight". Please see item Section I, Part D-1: Project Resumes.

Characteristics of users, or the sample:

To this date two distinct population samples have been used in this Program: an artificially created normal population and a population of culturally disadvantaged children, ages three, four, five, and six. It is anticipated that the product of this Program will be useful to teachers and administrators confronted with the problem of providing mathematics curriculum for both normal and culturally disadvantaged users.

Expected end products, or results:

The expected end products will be:

1. Field tested curricula which stimulate mathematical learning at earlier ages
2. Relevant instrumentation and evaluation procedures
3. A body of research evidence concerning mathematical learning in young children.

Usefulness of findings, End Products, or Results:	If the hypotheses of the various projects are validated then they may be incorporated into curriculum units for the populations mentioned above. These "units" will consist of instructional packages of software and requisite hardware, that can easily be disseminated to any school or school system that might desire to use the materials.
Relationship to Prior Center Projects, Other Center Programs/Projects, and the focus of the Center:	The objectives of the Mathematics Program are intended to achieve, in a cognitive domain, the general objective of the Research and Development Center; i. e., early and continuous stimulation resulting in an acceleration of cognitive growth. The Mathematics Program has pursued this intention through the development of packaged instructional units designed to stimulate pre-primary children to develop a conceptual schema basic to mathematics. This conceptual schema is felt to stimulate an earlier understanding and mastery of certain of the various arithmetic skills encountered in a more traditional mathematics program.

Georgia Research and Development Center in Educational Stimulation

Title: Science

Principal staff: Kenneth S. Ricker and William R. Zeitler

Purpose, objectives, or goals:

The basic goal of the Science Program is to provide a continuous, sequential, articulated science curriculum for children in the pre-primary and primary grades. The science experiences for children in the pre-primary grades focus on the development of behaviors related to the "process" aspect of science. The science experiences for the children in the primary grades are directed toward:

1. The acquisition of science concepts.
2. The development of behavior related to the "process" aspect of science.

The instructional materials for the Program are based on existing science curriculum materials, with modifications where desirable or necessary, and the preparation and field testing of new instructional packages when appropriate.

Importance, need, or justification:

The Science Program constitutes one of the several Programs organized by curriculum area to "probe the limits of cognitive development." In order to achieve this goal it is imperative that the science curriculum provide for continuous educational stimulation.

Research concerning science programs for children of ages three, four, and five is very limited. It is believed that children of this age group can and will profit from the teaching of science. The objectives of the programs, however, should be stated in behavioral terms rather than in terms of the presentation of science content. It is also imperative that consideration be given to the developmental characteristics of children in establishing the program objectives.

The objectives of the primary science curriculum for children of ages six, seven, and eight should provide for a natural extension of the goals of the pre-primary curriculum. It is believed that this extension involves:

1. The advancement of behaviors introduced in the pre-primary grades as well as the introduction of "new" behaviors.

2. The development of science concepts.

To achieve the above goals it is necessary that continuous attention be directed to:

1. Indications of an appropriate sequence and scope of science experiences.

2. Indications of the rate at which children can progress through a series of science lessons and demonstrate the desired outcomes.

3. Indications of the permanency or retention of the goals of the program.

Method, strategy, or design:

The learning experiences for the Science Program provide "activity" oriented in which the teacher serves as a guide in the learning situations. The lessons are outlines, pilot tested whenever necessary, and field tested in the field centers. These instructional materials are then revised for future utilization on the basis of the results of field testing.

A pre-test and post-test evaluation instrument will be designed to be used for each segment of lessons. In addition, each lesson includes a competency measure to allow the teacher to appraise the outcome of the lesson.

Characteristics of Users or the Sample:

The curriculum materials of the Science Program are used with the children in the pre-primary and primary classes in the Clayton County Field Center. The children in these classes are representative of the general population of Clayton County.

The curriculum materials for the pre-primary grades are used also with the children of ages three and five in the Gainesville City Field Center. This group of children is from lower socio-economic homes and includes both Negro and white children.

Expected end products or results:

Upon completion of the pre-primary project, a program of learning experiences in science for children of ages three, four, and five will be produced. These learning experiences will have designated levels of achievement so that children may work at the level which is appropriate and consistent with their abilities.

The expected outcome of the primary grade project is nine to twelve instructional units for utilization with primary grade children. The performance or behavioral objectives and instructional procedures for each unit will consider both science content and the "process" of science. The units will be open-ended so a teacher may work effectively with the ability levels within the class and probe the achievement levels of the children.

Usefulness of findings, end products or results:	At the completion of the projects, a program for a science curriculum for children of ages three through eight will be outlined. The program will provide for sequential, continuous and articulated instruction in science. The program will have undergone field testing under various conditions and will be adaptable to other school situations.
Relationship to prior Center projects, other Center programs and the focus of the Center:	The curricula of the pre-primary and primary projects are articulated so as to provide continuous educational stimulation for children of ages three through eight. At a later time an intermediate grade project will be initiated in order that the Science Program will help to achieve the basic objective of the Center: "To probe the limits of learning, particularly cognitive, for the purpose of establishing new norms of school learning."

Georgia Research and Development Center in Educational Stimulation

Title: Social Science

Principal Staff: J. Ball, M. L. Hawkins, E. T. Keach, P. E. Kelly, M. J. Rice, R. N. Saveland, J. Blackwood, M. Clum, A. Hunt, W. Imperatore, J. Steinbrink

Purpose, Objectives, or goals: The purpose of the Program in Social Science is to develop a program of conceptually structured units in social science for children, ages four through twelve. A simple language experience approach will be used to encourage the development of a limited social science vocabulary with three-year-olds. The intent is to conceive a program that will stimulate cognitive growth for each age group through the introduction of social science concepts, generalizations and skills.

In the process of working toward this major objective, the Program will focus its activities upon the achievement of the following:

1. A delineation of a core of major concepts of the social sciences
2. An age-placement for and sequencing of social science instructional materials
3. A development of measurement and evaluation instruments for assessing cognitive growth.

Importance, need, or justification: Research findings suggest that many social science concepts and skills can be taught earlier than previously advocated. To date, little effort has been made to implement these findings. The Social Science Program is primarily involved in developing instructional units and programs of skill development that build upon the research conclusions that children can profit from a study and use of the content and methodologies of the social sciences. The activities of the Program are designed not only to further substantiate the research findings but to suggest a model for those intending to develop a curriculum having a social science base.

Method, strategy, or design:

The essential processes of curriculum development are being utilized in the Social Science Program. Basically, this involves the following steps:

1. Identification and selection of social science concepts to be taught (upon consultation with the appropriate social scientists).
2. Development of instructional materials incorporating these concepts.
3. Development of evaluative techniques.
4. Pilot testing.
5. Production of final sets of learning activities.

Characteristics of users, or the sample:

The Social Science Program will continue to utilize the school population of Suder School, Jonesboro, Georgia, for the development of its materials. It is to be noted that selected samples from the Gainesville, Georgia school system will be utilized for pilot testing of materials. No attempt, however, will be made to follow the subjects in Gainesville through the twelve-year-old stage.

Expected end products, or results:	The Social Science Program is committed to teaching elementary school children selected concepts from the social sciences. It is anticipated that the child, following his involvement in this program, will be able to better understand his contemporary world in that he will have a knowledge of some of the basic ideas of the social sciences as well as the inquiry tools to assist him in analyzing man-man, man-land relationships.
Usefulness of findings, End Products, or Results:	Those involved in curriculum development can profit from the activities of the Social Science Program investigators. The Program's curriculum development activities, unfettered by the traditional obstacles to curriculum development, can serve to accelerate the development of social science instructional models for adoption or modification by school systems.
Relationship to Prior Center Projects, Other Center Programs/Projects, and the focus of the Center:	The Social Science Program activities are focused upon accomplishing the goal of the Georgia Research and Development Center in that the primary purpose of the Program is to further the cognitive development of the children through the conceptual system of the social sciences.

Georgia Research and Development Center in Educational Stimulation

Title: Art

Principal Staff: R. B. Kent, M. Grossman,
H. W. Lunsford

Purpose, Objectives, or goals: The present Program's goals can be broadly listed under three major emphases:

1. Student directed
    - a. To develop, in students, concepts relating towards understanding art as a visual language.
    - b. To help develop and exercise students' perceptual capacities.
    - c. To introduce students to man's art heritage.
    - d. To develop students' personal aesthetic and critical awareness.
    - e. And to help them to achieve personal and cultural identity by developing skills in art commensurate with their abilities.
2. Teacher directed
    - a. To develop interesting and challenging curriculum materials which will enable the average classroom teacher who generally does not have extensive experience in art to be a more effective and creative teacher of art.
    - b. To develop stimulating, logical, and articulated teaching strategies which will help achieve the above goals.

3. Research directed
   - a. To determine children's relative status regarding their perceptual abilities and creative potential through the Embedded Figures Test and Grossman's Draw-a-Clown Test.
   - b. To determine the efficacy of theoretical constructs relating to children's thinking and perceptual developments.
   - c. To analyze and evaluate the above data to determine behavioral change and development.

Importance, need, or justification:

Traditional art programs in the United States' elementary schools that have been based on maturational or activity point of view have not evidenced dramatic changes in the artistic-expressive level of our society. By the time most children reach the age of twelve or thirteen they are not able to use art as an effective means of personal expression.

A pervasive question in art education research today is whether children's art expression is a product of their inner expressiveness or rather a skill that can be systematically developed through appropriate teaching. The central hypothesis of the Research and Development Center in Educational Stimulation, University of Georgia, is that the cognitive, aesthetic, and motor performance of children can be significantly enhanced through structured, sequential learning activities. The Program's investigators believe that the Center's hypothesis can be directly applied to answer some very pertinent questions concerning the development of children's expressive abilities in art.

Method, strategy, or design: During FY 69 the Art Program staff will be working primarily with 72 kindergarten children who comprise four classes. There are two classes in Watkinsville, Georgia, and two in Bogart, Georgia.

Design for Experimental 1 and Experimental 2

Testing First Week	Weeks 2, 3, 4, and 5	Weeks 6, 7, and 8	Ninth Week
Experimental 1 Watkinsville	Direct teaching method using concrete motivational materials	Same plus addition of art appreciation materials direct teaching	Posttest
Experimental 2 Watkinsville	Process oriented, similar subject matter use during presentation; emphasis is non-directed	Same plus addition of art appreciation materials Non-directive	Posttest
Experimental 2 Bogart	Same as E_1, Watkinsville	Same plus addition of art appreciation materials direct teaching	Posttest
Experimental 1 Bogart	Same as E_2, Watkinsville	Same plus addition of art appreciation materials Non-directive	Posttest

Also in FY 69, the Program staff will pilot test the curriculum materials, with revised strategies of presentation, with the three and four-year-old children in the Athens Field Center.

Characteristics of users, or the sample:

The majority of the three-, four-, and five-year-old children used in this experiment come from similar middle class families. They have had no lessons in art.

Expected End Products, or results:

Preliminary research conducted by the Program's investigators indicated that young children can benefit from a structured approach to developing and stimulating artistic production and critical viewing of works of art. Central to this investigation is the hypothesis that a child's perceptual orientation is partially responsible for certain individual differences within children's art products and their attending to works of art.

Further, the investigators hypothesize that analytical-visual behavior is related to the production of qualitative, visual art products and to the critical viewing of visual phenomena. As a consequence, their research is oriented toward developing curriculum materials in art that will significantly improve children's analytical-visual abilities.

Usefulness of Findings, End Products, or Results:

These curriculum materials would be designed to stimulate the development of children's artistic abilities as well as their aesthetic appreciation. (An expansion of this point can be found under the section above on Purpose, Objectives, or Goals.)

Relationship to Prior Center Projects, Other Center Programs/Projects, and the focus of the Center:

As noted above, the Art Program tests the fundamental hypothesis of the Center through art production and art appreciation activities.

The Art Program, like the Mathematics Program, is interested in perception, spatial development, and the exploration of symbolism.

Georgia Research and Development Center in Educational Stimulation

Title: Music

Principal Staff: Gene M. Simons, Lois Ann Conoley, Betty Williford

Purpose, Objectives, or goals: The purpose of this Program is to develop and test an early childhood music curriculum which includes subject matter and teaching procedures intended to effect earlier, faster, and better comprehension of music fundamentals and mastery of basic music performance skills.

Importance, need, or justification: Music has long been recognized as an important subject in the early education of children. This recognition has not, however, been accompanied by development and research in music pedagogy for young learners, or the training of an adequate number of music teachers for the early grades. In the absence of applied music pedagogy which may be used by the general classroom teacher with little or no training in music, the important role often attributed to music in early education is seldom achieved.

At the present time, when music is taught, either directly or incidentally, teaching tends to be geared to a maturational psychology rather than toward an attempt to change the level of performance through instruction. The result, as in many other areas of the performing arts, is a low level of production in terms of both performance level and number of performers. While the object of music instruction in the public schools is not the production of virtuosi, music appreciation requires some fundamental knowledge of music production. Hence the stimulation of music performance by young learners meets the objective of greater music literacy as well as laying the foundation on which technical skill in music production can be based.

The fact that the early years of learning are important for music productivity and sensitivity has long been observed, both by descriptive research studies and empirical observation. At a very early age children demonstrate overt rhythmic and singing activity, often of an apparently spontaneous nature. They respond overtly and enthusiastically to various forms of music stimuli. This early responsiveness, as well as early teaching by such instructors as Suzuki, strongly suggests that the early years are critical years for certain forms of music training. By the time children have reached the intermediate grades, they have become aware of the gap between their performance level and new performance standards. With this increasing self-awareness, there is often a loss of interest in music.

Music in western culture is more than a folk tradition, as it is in many preliterate cultures. Musical production makes use of a symbol system for encoding and decoding, analogous to the alphabet for writing and reading. In addition, language about music requires the use of similar cognitive processes required in other knowledge systems. Music stimulation is therefore conducive not merely to music, but to the general verbal intelligence which uses words both analytically and synthetically.

Method, Strategy, or design:

1. Review literature on music teaching for young children (ages three to twelve years).

2. Identify specific objectives of the Music Program.

3. Identify promising experimental problems which are likely to have practical application.
4. Develop appropriate evaluation instruments.
5. Design and conduct research investigations intended to produce improved teaching techniques or materials.
6. Develop curricular materials and methods for testing in school centers.
7. Disseminate research findings and instructional programs.

Characteristics of users, or the sample:

Predominantly white, middle class children between the ages of three and twelve, constitute the subjects for the investigations. These children reside in urban areas as well as small town communities. The cross section approach in selection should enhance the ease with which the curriculum is replicated.

Expected end products, or results:

The various activities of the Music Program are expected to produce new music instructional materials for young children. These materials are planned to be structured, sequential programs which may be taught by the regular classroom teacher. It is also expected that these programs will incorporate certain new techniques which may be developed through experimental studies.

The development of music curricula for early learners which may be taught by the general classroom teacher will provide an opportunity to investigate applied problems of music pedagogy and at the same time provide evidence of the relations of musical productivity and creativity to general school achievement in a total program of stimulation.

Usefulness of findings, End Products or Results:

The recent interest and emphasis devoted to the training of pre-school children has created a great need for appropriate teaching materials, particularly at the pre-school level. Instructional packages and successful teaching techniques which are developed could be utilized by cross-section populations. With proper adaptation, they could also be used with culturally disadvantaged or accelerated students.

Relationship to Prior Center Projects, Other Center Programs/Projects, and the focus of the Center:

New Program plans are related to the single prior music project, 5-0250-06-1 (Dooley), in these ways:

1. The instructional package developed from Dooley's project at the third grade level will be field-tested.

2. Dooley's techniques have been adapted for use at the kindergarten level in the Williford-Simons program.

The Music Program shows promise of being related to other substantive Programs. Program coordinators have discussed informally the existence of apparent relationships in concept development among the various subject areas. However, there has not been adequate time since the inauguration of the Music Program (July 1, 1968) to explore or investigate these relationships.

The Third Annual Report stated as the focus of the R & D Center: "To determine the extent to which early and continuous structured stimulation of children, ages three to twelve, increases cognitive, aesthetic, and motor learning skills and influences affective learning." The planned Music Program is directly related to this focus. Its efforts to produce improved music teaching materials and techniques for very young and young children would aid the formation of school environments which could provide educational stimulation in all the fundamental areas of learning. The Music Program seems especially important in helping to develop the aesthetic responsiveness sensitivity of children, thereby contributing to the balance of the general focus of the Center.

Georgia Research and Development Center in Educational Stimulation

Title: Physical Education

Principal staff: Billy Gober, Clifford Lewis, Marilyn Vincent, Robert Bowen, Tom Bigelow, Mary Dee Leslie, and Larry Albertson.

Purpose, objectives, or goals: The overall objective of the Program is to devise a systematic physical education curriculum for children ages three through twelve which will contribute to higher levels of pupil performance than are achieved by traditional methods of instruction.

Importance, need, or justification: Rapid urbanization and the resulting construction are forces which act to limit the freedom of movement of today's young children. The opportunity to develop the basic motor skills through natural movement in one's environment is rapidly vanishing. The playground and planned programs of motor experiences must be made available to children in order to compensate for the lack of development through the natural environment. The traditional "free play" program provides activities which are too sporadic to be called educational. Vigorous activity and basic skill development instructions are essential for the welfare and success of children in modern society.

Method, strategy, or design: Initially, research efforts will concentrate on the collection of baseline data on motor performance skills. The procedure will be to ask children to perform certain selected motor tasks, and by a system of controlled observation on rating scales ascertain pupil performance levels. In the first year, evaluation will concentrate on determination of the appropriateness of various procedures for the performance of motor tasks, and will be conducted primarily from the standpoint of program revision and modification; gain studies will not be emphasized until the end of the second year of the program.

In each successive year after 1968-1969, age-grade programs will be introduced, based upon the motor development of children in the previous year of planned stimulation.

A curriculum will then be developed to stimulate motor development, and post-treatment observations made to evaluate the extent to which the prescribed developmental activities lead to an increase in motor performance.

Characteristics of Users or the sample:

Predominately white, middle class children between the ages of three and twelve will constitute the subjects for these studies. These children will reside in large urban areas as well as small town communities. The cross-section approach in selection should enhance the ease with which the curriculum is replicated.

Expected end products or results:

There have been few innovations in physical education for primary and intermediate children since the early 1930's. One of the specific objectives of the Research and Development Center in Educational Stimulation is to probe the limits of learning in children, including motor learning, for the purpose of establishing new norms for such learning. The expected end product of this program, by 1974, is the description and evaluation of a curriculum in physical education for children, ages three through twelve, which would contribute to higher pupil performance levels in motor skills than are presently the case.

Usefulness of findings, end products, or results:

One of the main factors which contributes to the omission of physical education instruction at the pre-primary and primary levels is the feeling of inadequacy by the teachers. The attitude that one must be an accomplished performer and athlete to conduct a program in physical education is in part responsible for this feeling.

One objective of the curriculum development program in physical education is to produce a design which can be used by the classroom teacher who may not be oriented toward physical education. Hopefully, natural enthusiasm and a skill vocabulary will constitute the only prerequisites for presenting a program in basic skill development.

Relationship to prior Center projects, other Center programs and projects, and the focus of the Center:

Structured stimulation in the area of motor learning is one of the primary objectives of the Center and the main goal of the Physical Education Program. Determining the extent to which early and continuous stimulation of children, ages three to twelve, increases motor learning is of significant importance and can be accomplished through structured sequential learning activities.

Georgia Research and Development Center in Educational Stimulation

Title:	Evaluation
Principal Staff:	W. G. Findley, T. M. Goolsby, Jr. P. L. Wood, E. P. Torrance
Purpose, Objectives, or goals:	The overall objective of the Evaluation Program continues to be to determine the amount of learning achieved by children who are provided early and continuous educational stimulation in the field centers in comparison with what might have been expected of them under prevailing instructional practices. More specifically, it is to determine whether children provided such stimulation from age three to age twelve achieve at age twelve two grades (or two years) above expectations on appropriate standardized tests and other tests devised to appraise cognitive outcomes not adequately reflected in current tests.
Importance, need or justification:	A fundamental requirement of a Research and Development Center is evidence of the success or failure of its efforts to achieve its objectives. Such evaluation may be incorporated into each Program of a Center, as has been done here for formative evaluation of instructional outcomes. In the Georgia R & D Center for Educational Stimulation, a separate program of evaluation is required to make summative evaluations of the extent to which gains in the main longitudinal study are achieved, maintained, and enhanced over the period from age three to age twelve.

Method, strategy, or design:

In collaboration with the Program coordinators for Programs 1-7, objectives of their instruction are being spelled out in behavioral terms suitable for establishing the appropriateness of particular tests and test-item types for appraising achievement of these objectives by children in the longitudinal study who have received early and continuous educational stimulation designed to foster achievement of these objectives. Dr. Benjamin Bloom of the University of Chicago is being used as a special consultant on this.

Achievement at intermediate check-points of transition between pre-primary and primary units at approximately age six, and between primary and intermediate units at approximately age nine, as well as at the end of the intermediate unit at age twelve, is to be evaluated in order to delineate individual and group progress toward the ultimate objectives. In fact, annual checks at each grade will be made after age six. this is taken to necessitate:

1. The selection of an achievement test battery with well established norms and wide acceptance in the educational community (Stanford Achievement Test) as the core of comparisons with expectations

2. Supplementation of this battery with other measures to appraise important outcomes stressed in our instructional programs, but not represented in the core battery. (See Section on Relationships below for further detail on collaboration.)

In general, a covariance design will be attempted, using the Peabody Picture Vocabulary Test and the Stanford-Binet, jointly and separately, as predictors of achievement measures at successive levels. Control groups who were tested but not selected for admission at age three will be measured at the same check-point ages on the Stanford Achievement Test and supplementary measures. Normative data on the supplementary achievement measures will be established ex post facto for any measures that do not have them.

A special feature of the testing of pupil progress is the use of more advanced tests to measure and describe the nature of advancement of pupils beyond expectations. Thus, at age twelve, the pupils will be given the Stanford Achievement Test for the end of grade eight as well as the one for the end of grade six. In this way it will be possible to describe advanced progress in terms of:

1. Whether it exceeds expectations for normal twelve-year-olds on a twelve-year-old test by as much as fourteen-year-olds usually do

2. Whether it matches the expectations for fourteen-year-olds on a test designed for fourteen-year-olds at their normal point of progress.

Included in the supplementary measures will be child-observation techniques being developed and refined in collaboration with the pre-primary teachers in the longitudinal study in Clayton County, in consultation with John E. Dobbin, Educational Testing Service. Illustrated in the ETS publication "Let's Look at First Graders," which was developed in a New York City project for improving instruction and appraisal of relevant behavior, the child-observation aspect has been selected for refinement as an evaluation procedure. The fundamental premises, on which we are acting, are that:

1. Teachers make decisions regarding day-to-day instruction on informal observations of child behavior.

2. With appropriate collaboration they can conceive and refine continuums of symptoms of cognitive growth related to reading, mathematics, etc., which they observe.

3. The teachers' informal, but active memory of observed behavior can be tapped at intervals for symptoms of growth.

4. The resultant data can be analyzed for evidence of group status and progress as well as individual differences in the rate of progress. Since "testing" of young children is difficult, this must be deemed an important supplementary approach.

Further useful information can be obtained by actively soliciting cooperation of school systems that are attempting innovations that have the stimulation of cognitive growth as a primary goal. Currently, we are in active liaison with several school systems, three of which have already expressed willingness to furnish data on comparable achievement measures on the progress of their students in the elementary grades. The procedures, designed for application to the data bank being accumulated from our longitudinal studies, will be applied for comparative purposes. The chief purpose, as we currently conceive it, is to underline effects achieved under similar programs in different settings, and at various beginning ages, rather than any presumed ability to offer comparative judgments on the relative merits of different programs.

Characteristics of users, or the sample:

The major population selected for study is a cross-section of the pre-primary age population of a suburban county containing the Atlanta airport, whose population mix happily matches fairly closely the national population mix. The parents include a substantial segment of blue-collar workers at the airport and a Ford assembly plant as well as suppliers of community services and commuters to Atlanta. Ethnically, the county population and our experimental study body are 8% Negro, compared to a national average of 10-11%. The superintendent has guaranteed that the annual samples of 80 children will be maintained in intact classes through grade six, age twelve. Moreover, we have been permitted to choose the children from families that have already lived in the county for three years and express an intent to keep their children in the experimental classes until age twelve. Finally, each incoming group has been selected to provide a population with a mean of 100 and standard deviation of 15 on the Peabody Picture Vocabulary Test. Additional samples are being used for trial of instructional materials and evaluation techniques, but the primary emphasis is on the longitudinal study in Clayton County.

Expected End Products, or results:

The end product of the Evaluation Program will be a refined set of tests, measures, and procedures suitable for inclusion as recommendations for evaluation to accompany recommended instructional procedures developed in the substantive programs, Programs 1-7. The results of the Evaluation Program will be reports of of the effectiveness of Programs 1-7 in in achieving the goal of advancing children beyond their normal expectations of progress by two grades (or two years) by age twelve. These reports may be expected annually in modules that will allow the reader to follow the progress of a particular entering group at successive ages or stages, or to note progress of successive entering groups as they pass particular points. An integral part of each report will be an account of, or reference to, the treatment or instruction received. In addition to studies based on initial input data of individual pupil capability and background, status or progress in successive years will be studied with cumulative evidence of prior progress as the covariate. A special series of studies will be devoted to the predictive power of individual measures of intellectual competence, including the Stanford-Binet, taken at ages three, four, and five, so as to better fit their component subtests into a matrix or pattern of independent, intervening, and dependent variables. (See description of Activities 4 and 5, Third Annual Report, p. 135).

Usefulness of Findings, End Products, or Results:

The findings will provide specific data on the cumulative effects of early schooling. Since the study involves a cross-section of a public school population, it will give information of what one might expect if "all the children of all the people" went to school at age three. Successive years should bring better results, but currently there is no other available evidence of cumulative effects of early schooling. (See also section above on Expected End Products or Results).

Relationship to Prior Center Projects, Other Center Programs/Projects, and the focus of the Center:

The Evaluation Program involves close collaboration with Programs 1-7 and their coordinators in the specification of objectives for summative evaluation. The selection or construction of supplementary tests, beyond the core achievement battery, will involve considerable work over and above the work of specifying the objectives themselves. Fruitful discussions should gain from and contribute to the work on formative evaluation assigned to the coordinators of Programs 1-7. Program 12, concerned with the data bank, is intimately involved in all the Evaluation Program; indeed it could be considered an integral function. As stated above, evaluation is directly concerned with answering the key question of the effectiveness of the Center's programs.

Georgia Research and Development Center in Educational Stimulation

Title: Developmental Psychology

Principal staff: C. D. Smock and Others

Purpose, objectives, or goals: The purposes of the Developmental Psychology unit are as follows:

1. To serve as consultants and researchers in psychological, sociological, and child development areas of concern to the developmental specialist in the seven substantive Programs.
2. To identify and define research problems of general significance that are affecting the development of effective curriculum materials in the substantive Programs.
3. To implement basic research on the questions emerging from the problems of the developmental specialists.
4. To communicate the results of these investigations to the research and developmental specialists and to professional educational or other relevant groups.

Importance, need, or justification: The Influencing Variables Program is organized around the description and clarification of the processes of the development of logical problem-solving strategies and the implication of these processes for generating more effective educational strategy in the various subject matter areas. Recent theories of intelligence and intelligential development have raised a number of new and basic questions irrelevant to intellectual development and to possible effective educational strategies for accelerating achievement (e.g., What are the environmental and experiential conditions tending to inhibit the development of logical or operational systems of thought in the young child? What are the social (including family), cultural and/or genetic factors that exert significant influences on cognitive acquisitions and early educational stimulation, and what are the best means for maximizing motivation to learn across several stages of childhood? etc.).

Method, strategy, or design:

Implementation of this Program must take into account the following steps:

1. Identification of researchable problems.
2. Design of a research project to answer the question.
3. Interpretation and integration of these data into the developmental program for early education stimulation.

Identification of researchable questions emerges from discussions with coordinators and principal investigators concerned with the development of particular programs for accelerating educational achievement, in meetings of the coordinator of Developmental Psychology with other program coordinators, or during the consulting activities of principal investigators with others.

Characteristics of Users or the sample:

The investigators in this Program produce findings that are of general utility to developmental specialists in education,

education researchers, child developmentalists, and developmental psychologists.

Expected end products, or results:	The results of the activities of this Program consist of findings, interpretations, and principles that are applicable to developmental specialists (and others) concerned with early educational stimulation. In addition, it is expected that these results will be widely communicated in professional journals in education, child development, and psychology.
Usefulness of findings, end products, or results:	The results of research in this Program should insure better understanding of the conditions under which effective educational acceleration is possible in the various subject matter areas.
Relationship to prior Center Programs/Projects, and the focus of the Center:	The activities of this Program contribute not only to the definition and refinement of developmental and research activities of the subject matter Programs, but also contribute information about specific problems associated with child development that are especially urgent to all attempts to develop programs of early educational stimulation. It is essential that we not only know that a particular substantive Program "works" under highly professional conditions, but also that we verify its generality, its effectiveness as related to the social and family background of the child and learning characteristics, and its long term motivational "side effects." As in the case of all research in a developmental center, particular projects may range in focus from specific problems of learning associated with a particular subject matter area, to theoretical studies designed to provide information relevant to general problems related to the effectiveness

of early educational programs. In this particular Center, the analysis of "child" characteristics (e.g., mechanisms of logical thought development and/or personality) and the more distant variables (e.g., social class and/or family structure) are necessary to fully understand and effectively utilize innovations in curriculum, teacher strategy and materials.

Pittsburgh Learning Research and Development Center

Title: Primary Education Project

Principal staff: Dr. Lauren Resnik, Dr. Margaret Wang, Dr. Warren Shepler, Dr. Larry Reynolds, and Dr. Raymond Hartjen.

Purpose, objectives, or goals: The purpose of this project is the development of a model for individualized education at the preschool level.

Importance, need, or justification: In view of the massive failure of the current educational systems to provide adequately for the education of all children, some revision is needed. The Individually Prescribed Instruction project has provided a major input into the beginning of the development of this new system. The Primary Education Project is designed to extend the work in this area and to extrapolate it down to the preschool level.

Method, strategy, or design: Using one inner-city school as a base, the PEP Staff is developing detailed curriculum and classroom management procedures appropriate for very young children of varied backgrounds. The key to this environment lies in an individual progress plan in which each child works through the finely graded steps of a curriculum at a rate and manner suited to his own needs.

The curriculum emphasizes basic skills and concepts that underlie a variety of subject matters. They include basic perceptual-motor orientation, language concepts and logical processes, memory, and problem-solving skills. The sequences

Method, strategy, or design (Continued):	are designed to reflect the natural order in which children acquire key skills and concepts. The appropriateness of each sequence will be empirically validated by LRDC Staff members over the next several years. The teacher will use tests to determine where in each sequence each child falls and to design an individually tailored program for him. Both individual and small group activities will be used. Children will learn on their own and from each other as well as from the teacher.
Expected end products:	The end product is presumed to be a total curriculum for young children.
Evaluation procedures:	Two kinds of curriculum and test evaluation have been undertaken, one based on data in regular classroom diagnostic testing, collected continuously throughout the school year; the second based on a special testing program.
Relationship to other programs:	The PEP Staff works very closely with the IPI Staff in attempting to articulate the two programs. In addition, there is a very close relationship between the PEP Staff and the staff of the Frick School where the PEP Program is in progress.

Pittsburgh Learning Research and Development Center

Title: Individually Prescribed Instruction Project

Principal staff: Dr. John Bolvin, Dr. Henry Cohen, Dr. Glenn Heathers, Dr. Lepold Klopfer, Dr. Jerome Rosner, and Dr. Warren Shepler.

Purpose, objectives, or goals: The major purpose of the Individually Prescribed Instruction (IPI) Project has been forming a workable model for the individualization of instruction in the elementary school.

Importance, need, or justification: Two basic assumptions derived from the Center's model for individualized instruction underlie the design of IPI. These assumptions are that:

1. Students develop mastery of subject matter as they move through the curriculum.
2. In order for individualization to become manageable within the classroom it must provide for some degree of self direction and self initiation of instruction.

These two assumptions, along with efforts to provide a maximally efficient instruction system for each learner, guide the selection and development of curricula, test material and classroom management procedures for individualized instruction.

Method, strategy, or design: Major efforts of the Center's IPI Staff have been in developing materials, pupil tests, and classroom management procedures. Beginning in its first year with

Method, strategy, or design (Continued):

commercial materials, the program has now advanced to the point where all materials are either Center developed or are commercial materials built specifically for the IPI Program.

In the beginning IPI focused primarily on math and science curricula. During the past year they have added three significant components. One of these is a reading curriculum. The second of these is a procedure for having the child write his own prescriptions for the individualization of his curriculum. The third major developmental effort in IPI has been the initiation of a program to provide systematic behavioral reinforcement to students in the IPI classrooms. The IPI has also worked closely with the PEP Staff as PEP attempts to extrapolate the IPI principals into the lower grades.

Expected end products:

End products are presumed to include detailed curricula in all the areas covered, which include minute steps in each of the areas. Reinforcement procedures appropriate for use with an individualized curriculum are also presumed to be an expected end product.

Evaluation procedures:

IPI Test development is concerned with three major classes of activities:

1. The development and analysis of test and testing programs for use with existing IPI curricula.

2. The design, data collection, and analysis of data which are relative to the formative evaluation of IPI.

3. The development and specification of disseminable testing and measurement models which are generally

Evaluation procedures (Continued):	useful to programs of individualized instruction.
Relationship to other programs:	The IPI Staff at LRDC has consistently maintained very close working relationships with the Oakleaf Elementary School, where the IPI curriculum has been developed and installed. In addition, the IPI Staff works very closely with the PEP Staff in the development of the new PEP curriculum.

Pittsburg Learning Research and Development Center

Title: Beginning Reading Project

Principal staff: Dr. Robert Glazer and Mrs. Roselyn Frankenstein.

Purpose, objectives, or goals: This project has as its goal the development of a regularized system for teaching beginning reading to young children.

Importance, need, or justification: The reading program developed as a part of this project has been based upon the concept that the number of stimuli presented to readers should be limited or controlled in a systematic way.

Method, strategy, or design: A series of beginning readers and accompanying workbooks have been developed by the Beginning Reading Project staff, using a controlled system which attempts to control the presentation of the material in several ways.

1. Consonant graphemes represent only one sound.
2. Each of the eleven vowel phonemes is associated with a color, and the multiple graphemic representations of the vowel are printed in that color.
3. The unsounded or silent letters are printed in an especially "thin" type style.
4. Materials are printed in a special font which has been devised to minimize confusion, such as letter reversals.

In essence the testing and refinement of the materials is continuing at the present

	time. The major thrust of the project at the present time is the beginning of the individualized version of the special regularized reading series.
Expected end products:	End products are presumed to be a series of readers which present beginning reading materials in a regularized fashion.
Evaluation procedures:	Evaluation procedures were not clear in terms of their summative aspect. Formative evaluation appears to be a continuous process as the materials are developed.
Relationships to other programs:	No detailed information was available concerning this section.

Pittsburg Learning Research and Development Center

Title: Preschools Skills Project

Principal staff: Dr. James Holland

Purpose, objectives, or goals: The goal of this program appears to be the development of a series of programs to teach preschool skills to young children.

ABSTRACT OF PROJECT SUBMITTED BY PRINCIPAL INVESTIGATOR

At present the preschool curriculum consists of a language based series of programs to teach children specific skills that they will need before entering first grade. The battery of programs amounts to about fifty hours of instructional material which is divided into four parts. Programs are being developed for and tested on children whose cultural backgrounds make it difficult for them to profit from typical school experiences. Program I (basic language and concepts program) teaches children to make positive and negative statements about objects. Once they have learned to understand and say these statements, they learn concepts about color, size, shape, inductive reasoning, and categories. Program II (syntactic discrimination) teaches children to discriminate singular and plural nouns, present and past progressive tenses, subject and verb agreement, and positive and negative sentences. Program III (final consonants) teaches children to discriminate between minimal pairs of words differing only in final sounds. Program IV (rhyming program) teaches children to find words that rhyme.

Each program was first prepared for presentation in a laboratory machine version. Since the sophisticated machinery is not available in the classroom each of the programs is being rewritten for classroom use. . .

At present the entire series of programs which has been described are presented either by the Appleton-Century-Crofts Portable Laboratory System teaching machine, the computer, or tape recorder with an advanced control button and chemically treated paper. Once reliable data have been gathered on each part of the program, we are converting them all to the tape recorder and chemically treated paper. This is being done to make actual classroom use of the material a possibility. For some of the work described, the conversion has already been made, for the rest, conversion is in progress.

APPENDIX 9

PROGRAM SUMMARIES OF REGIONAL EDUCATIONAL LABORATORY PROGRAMS INCLUDED IN CURRENT ANALYSIS

Appalachia Educational Laboratory (AEL)

Title:

Early Childhood Education Component (Appalachian Home-Oriented Preschool Program)

Principal Staff:

Mr. Roy Alford, Mr. Don Nelson, Mr. Thomas Mitchell, Mr. Joel Fleming, Miss Linda O'Dele, Mrs. Patricia Hughes, Mrs. Shirley Cook

Purpose, objective, or goals:

The overall goal of AEL is to provide ready access to educational opportunities for children and youth of Appalachia. The goal of the Early Childhood Education Component is to design a preschool program for Appalachian children ages 3, 4, and 5 years to be presented to them in or near their homes.

Importance, need, or justification:

The Appalachian region (West Virginia, parts of Ohio, Kentucky, Tennessee, Virginia, and Pennsylvania) is isolated from the rest of the nation by its mountainous topography and primitive road systems which present both physical and psychological barriers to communication. Regardless of the measurement criteria used, Appalachian schools fall lower in greater proportions than do schools in the rest of the United States.

Few rural children in Appalachia have access to preschool programs. The persisting cultural deprivation of Appalachia and the evidence of the critical period of the early years of development led to the selection of the early childhood education component.

Method, strategy, or design:

The overall strategy for the achievement of the objective of the laboratory is the establishment of a network of Educational Cooperatives. An educational cooperative joins autonomous school districts, their state department of education and a nearby

Method, strategy, or design (continued)

college or university into a voluntary cooperative structure for the improvement of education and makes extensive use of media and mobile facilities for the delivery of instruction. The strategy of the Cooperative is intended to affect three related educational variables including:

1. administrative policies and practices of public education
2. modes of linkage and the quality of interface between teacher and learner
3. programs of instruction.

The development of a Curriculum and Instruction System for the Educational Cooperative is expected to alter the current instructional programs in schools. The two current programs which affect young children are:

1. a home oriented program of early childhood education for 3, 4, and 5 year old children
2. a language program for preschool and early primary grade children.

The Early Childhood Education Component is developing a child centered home oriented preschool program which is delivered by means of television, home visitations, mobile classrooms and other media. The curriculum materials are developed by the Curriculum Materials Committee based on an extensive survey of the literature on child development and early childhood education and upon a survey of the characteristics of the Appalachian population which AEL serves. TV tapes, guides for home visitors, parents, and mobile classroom teachers, as well as materials for children, are being developed. The design of the study includes four groups--three experimentals and one comparison group.

Method, strategy, or design (continued)

Group 1--TV only (N=approximately 150)
Group 2--TV + home visitor (N=approximately 150)
Group 3--TV + home visitor + mobile classroom (N=approximately 150)
Group 4--A distal comparison group who live out of range of the TV station presenting the experimental program (N=approximately 150)

The home visitors, who are indigenous personnel trained in institutes by AEL, visit each home in Groups 2 and 3 once a week. The mobile classroom, which is designed to facilitate social development through group interaction, visits the children in Group 3 once a week for two hours, meeting with them in groups of 10 to 15 each.

Characteristics of the sample:

The sample consists of 3, 4, and 5 year old Appalachian children. The West Virginia sample is not a disadvantaged sample but follows the national distribution closely with regard to socioeconomic make-up.

The sample for the Early Childhood Education Component was chosen at random by clusters, and the subjects were solicited by home visitors.

Characteristics of the users:

School systems, educational cooperatives, etc., serving preschool-aged children in Appalachia.

Expected end products:

Expected end products include:

1. a preschool curriculum for 3, 4, and 5 year olds implemented through a series of 140 TV tapes
2. a set of appropriate teaching materials for use by teachers, parents, and children.

Evaluation procedures:	See AEL's Evaluation Sheet following.
Relationship to other projects:	This project is related to other projects which are attempting to develop TV tapes for presentation to young disadvantaged children. See for example the Children's Television Workshop.

Appalachia Educational Laboratory (AEL)

Title: Appalachia Focused Language Component

Principal Staff: Mr. Lynn Cannady

Purpose, objective, or goals: The overall goal of AEL is to provide ready access to educational opportunities for children and youth of Appalachia. The goal of the Appalachia Focused Language Component is to enable children of the region to master all communication skills at levels as high as those achieved by children in the rest of the nation and to apply these skills effectively to learning activities both within and outside the school.

Importance, need, or justification: Surveys of educational needs reveal that children of the Appalachian region fall well below those in other sections of the country in communication skills. The significant relationship of language facility to academic success has prompted AEL to design the Appalachia Focused Language Program whereby children of the region may gain a head start for school tasks.

Method, strategy, or design: The Appalachia Focused Language Component is attempting to develop a home oriented and early school instructional program which will emphasize communication skills that will be measurably more effective than current programs. Their strategy involves the use of televised animated cartoons to teach a finely graded sequence of materials which begin with the most learnable units of language based on E. B. Coleman's report. *

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* Coleman, E. B. Collecting a data base for a reading technology. Unpublished paper University of Texas at El Paso.

Characteristics of the sample:	The sample consists of 3, 4, and 5 year old Appalachian children. The West Virginia sample is not a disadvantaged sample but follows the national distribution closely with regard to socioeconomic make-up.
Characteristics of the users:	School systems, educational cooperatives, etc., serving preschool-aged children in Appalachia.
Expected end products:	Expected end products include: 1. a lesson series of Appalachia-based materials to give children access to a quality speech model 2. a series of approximately 300 animated cartoons supplemented by other materials such as 30-second televised songs, tape recordings, slides, filmstrips, and various supplementary written materials for children, parents, and teachers.
Evaluation procedures:	See AEL's Evaluation Sheet following.
Relationship to other projects:	This project is related to other projects which are attempting to develop TV tapes for presentation to young disadvantaged children. See for example the Children's Television Workshop.

Decision Situations	Decision Criteria	Sources of Data	Data Instruments	Sampling Plan
I. Program Effort				
A. Installation B. Operation C. Maintenance	Personnel, facilities and equipment needed for installation, operation and maintenance	Laboratory personnel	ECE budget, subcontracts service agreements, invoices, memoranda and interviews	
II. Program Performance				
A. Students				
1. Cognitive	Scores on selected formal and informal tests	3, 4, and 5 year old students enrolled in the various treatment groups	Curriculum specific test P. P. V. T. Frostig I. T. P. A.	Stratified random sample
2. Language	Status of child's language development		Recording of child's oral language	
3. Social and attending skills	Not included in 1969 Evaluation Plan			
B. Parents	Attitudes, interest and participation of parents	Parents	Questionnaire, check lists and anecdotal records	Stratified random sample
C. Paraprofessionals	Role expectation	Laboratory personnel, paraprofessionals and parents	Questionnaire and interviews	
D. Classroom teacher	Role expectation	Laboratory personnel, paraprofessionals and parents	Questionnaire and interviews	

Decision Situations	Decision Criteria	Sources of Data	Data Instruments	Sampling Plan
III. Performance Pervasiveness	1. Total number of children being served by program 2. Number of children which the program is capable of serving	Program and Resource Center personnel	Interview	
IV. Program Efficiency	Ratio of effort and pervasiveness	Number I and III above	Same as Number I and III	

Central Atlantic Regional Educational Laboratory (CAREL)

Title: Early Childhood Program in the Arts and Humanities

Principal staff: Dr. C. Taylor Whittier, CAREL Directtor, Miss Mary Louise Grayson, Mr. Irving Kaufman, Mrs. Maxine Kumin, Mr. Americole Biasini, Miss Sally Nash, Mrs. Naima Prevots, Mr. John Bish, Mr. Frank Kovacs, Mrs. Lucille Bogan, Mrs. Jeanette Amidon, Mrs. Geraldine Dimondstein, Mrs. Carolyn Tate, Miss Stevanne Auerbach, Mr. Robert Alexander, Mr. Norman Gevanthor, Mr. Satoko Ackerman

Purpose, objective, or goals: The objective of this component was stated as the development of a curriculum in the arts and humanities for young children ages three through eight.

Importance, need, or justification: For the young child, the arts and humanities provide a fundamental way of knowing and learning. The arts and humanities support and amplify individuality as a significant aspect of the educational experience. In order to achieve these missions, five areas of content were chosen which best represented the arts and humanities for young children--art, dance, literature, music, and theater.

Method, strategy, or design: During the initial development phase of the program all of the individual components were committed to the formulation of a conceptual description of the basic elements of the artistic fields which underlay the development of curriculum plans. Following this the actual

Method, strategy, or design (Continued):	curriculum plans themselves were to have been worked out in a cyclical workshop classroom type of operation. Once these curricula had been developed they were then to have been tested in actual classroom situations.
Characteristics of the sample:	The sample consisted of children in the greater Washington, D.C. area within the appropriate age ranges as needed to try out the various elements and modules of the various components. Socio-economic class as well as other variables apparently varied according to the needs of the particular component at that time.
Characteristics of the users:	The users were presumed to be all persons working in aesthetic and/or artistic education with young children.
Expected end products:	Expected end products were presumed to include curriculum guides in each of the components of the program--art, dance, literature, music, and theater.
Evaluation procedures:	Part A: Summative Evaluation. Procedures concerning summative evaluation were not clear. Part B: Formative Evaluation. During the initial stages of the conceptualization of the underlying elements the artists were also instructed to begin inquiry into the nature of assessment and the most effective methods of evaluating arts and humanities. Part C: Program Evaluation. No detailed information was available concerning program evaluation.
Relationships to other projects:	No detailed information was available concerning relationships to other projects.

Central Midwestern Regional Educational Laboratory (CEMREL)

Title: Early Development Adversity Project

Principal staff: Dr. Thomas Jordan

Purpose, objectives, or goals:

The purpose of this project is to study the contributions of early biological and social factors to the development of pre-school readiness and achievement. More specifically its objectives are:

1. Identify major influences on the cognitive and physical development of young children
2. Describe the development of children with various combinations of pre-natal and peri-natal stress born in various social-strata
3. Identify the point in time when various kinds of children begin to function in abnormal ways and accordingly identify life stages at which intervention and remedial programs should be instituted.

Importance, need, or justification:

Most studies of children with some learning disability and/or other abnormality are done in retrospect. Few, if any, data are available from a prospective standpoint. This project seems to address itself to this need by instituting a longitudinal follow-on study of children identified at birth as "high risk" babies to determine what, if any, consequences result from these early stresses and/or insults, and subsequently, what remedial measures might be taken.

Method, strategy, or design:

One thousand and five babies from five St. Louis hospitals were identified at birth as falling into four "high risk" groups as follows:

1. Disorders of pregnancy and gestation
2. Disorders of delivery
3. Neo-natal disorders
4. Multiple complications.

The new born sample was gathered over a period of four months from December, 1966, through March, 1967. Data were then gathered in the following steps:

1. Referrals by obstetric and pediatric staff
2. Parent interviewing
3. Test administration and data collection
4. Classification of cases
5. Data processing.

Age, marital status, social class, ethnic group, and the Loevinger AFR 68 Measure of Maternal Values were obtained on the mothers. A biological predictor series consisting of length, weight, and Apgar rating was taken on the infants. The children were measured again at six-months, twelve months, and twenty-four months of age and periodic twelve month follow-up testing is planned. At six months the children were administered the:

1. Ad Hoc Child Development Scale

Method, strategy, or design (Continued):	2. Height measures 3. Weight measures This battery was repeated at twelve months. At twenty-four months the physical measures of height and weight were taken again and the following were added: Preschool Attainment Record, the Verbal Language Development Scale, and the Stanford Binet, 1960, Form LM. Measures to be used over the thirty-six month testing are currently in planning.
Characteristics of the sample:	The sample includes one thousand and five babies falling into two groups: infants identified at birth or slightly before as high risk babies and control group not so identified.
Characteristics of the users:	The users are presumed to be technical and professional persons working with the children initially and later identified as high risk with respect to their education and persons working in educational intervention programs with young children.
Expected end products:	End products are expected to be: 1. Technical research data on the cohort 2. Possible remedial strategies or suggestions for points, techniques, etc. for intervention.
Evaluation procedures:	Part A: Summative Evaluation. Evaluation of the research data has been by multiple linear regression analysis. The data have largely been descriptive and

Evaluation procedures (Continued):

correlational in order to establish a knowledge base on children of this type from a prospective standpoint.

Part B: Formative Evaluation. No detailed information concerning formative evaluation was available.

Part C: Program Evaluation. No detailed information concerning program evaluation was available.

Relationships to other projects:

No information was available on the relationship of this project to others either at CEMREL or at other agencies. The project director expressed willingness to cooperate in any feasible way with data sharing, sample sharing, etc.

Central Midwestern Regional Educational Laboratory (CEMREL)

Title:	Learning Disabilities Program
Principal staff:	Dr. David Hamblien, Dr. David Buckholdt, Dr. Daniel Ferritor, Miss Harriet Doss, others.
Purpose, objective, or goals:	The general purpose of this program is stated as "designing intervention systems" which: a. affect permanent changes in the behavior, attitudes, and skills of disabled children b. can be packaged in materials and diffused in a form which will allow teachers and therapists to form the developed packages into a program to overcome the learning problems which exist in their classrooms. The program attempts to do this via three elements: 1. management of exchange contingencies 2. curricula 3. instructional processes.
Importance, need, or justification:	While many educational technologies are under development today which attempt to ameliorate children's deficiencies, few address either a. a permanent change b. specific learning disabilities. The learning disability program of CEMREL appears to be addressing itself specifically to these two needs.

Method, strategy, or design:

The strategy of the learning disabilities program appears to be to develop educational intervention strategies for children with learning disabilities in three phases. During phase one, total reinforcement systems will be developed whose objective will be bringing children's classroom behavior under the control of stated reinforcers of these reinforcement systems. The Laboratory staff hopes to do this by in-service training of teachers. Once the behavior of the children is under control, phase two will develop specific curriculum materials and/or introduce standard curriculum materials which will be appropriate for use with these reinforcement systems. The materials currently under way are those of the language training procedures of Bereiter-Engelmann. Once the reinforcements systems and later the language training procedures have been well established with the teacher, then aesthetic education materials and comprehensive school mathematics materials will be introduced. At this point, the learning disabilities curriculum becomes a total laboratory wide program for CEMREL. Phase three calls for the design of instructional systems to benefit the disabled child. The five year goals for this phase have been stated as follows:

1. to specify the learning disabilities problems which handicap ghetto, hyperaggressive, and autistic psychotic children, and to develop remedial strategies for permanently correcting these disabilities
2. to field test these intervention strategies
3. to package intervention strategies in a form which will be of use to

Method, strategy, or design (continued)

teachers who must work with these disabled children

4. to field test and revise these packages to meet rigid performance criteria.

Two major packages will be developed, one for ghetto hyperactive and hyperaggressive children and one for psychotic-autistic children. For ghetto hyperactive and hyperaggressive children, specific components of these packages are expected to include:

1. development of a general purpose reinforcement system
2. combination of reinforcement systems into curriculum materials
3. development of a program to capitalize on the "comparison effect" (a system of peer comparison designed to increase motivation)
4. the integration of hyperactive-hyperaggressive children into a normal classroom
5. development of a cooperative teaching program
6. development of a peer tutoring program
7. development of long-term contingency
8. development of parent training program
9. development of a system which promotes teacher creativity
10. development of an academic kindergarten program (as opposed to a pre-academic program)

For psychotic-autistic children, package components would focus on:

1. development of imitation training procedures
2. development of a remedial program for negativism

Method, strategy, or design (continued)

3. development of a procedure for accelerating generalization
4. development of a record keeping system
5. development of a family training program

It has been the strategy of the learning disabilities program to develop methods and techniques in the controlled laboratory situation with the severely disordered children and then move these into the classroom situation with less severely disordered children for tryouts. Data from these are then fed back into the laboratory situation where revisions and/or development of new techniques occur.

Characteristics of the sample:

An urban ghetto school in St. Louis will be used where most, if not all, of the classes from K through 3 will be involved (at the intermediate level initially pilot studies will be limited to one class in each grade 4 through 8). The remainder of the program will involve all of the autistic children who are presently enrolled in the autistic laboratory at the George Washington University.

Characteristics of the users:

Users are presumed to be all persons working with either ghetto hyperactive-hyperaggressive children and/or psychotic-autistic children.

Expected end products:

Expected end products are presumed to include:

1. reinforcement systems of use in bringing the classroom behavior under control
2. careful selection of already developed curriculum materials and/or development of new curriculum materials appropriate for use with these reinforcement systems

Expected end products (continued)

3. instructional systems or intervention strategy packages for use by teachers who work with each of the described populations
4. various technical reports and papers concerning the development of each of the above.

Evaluation procedures:

Part A: Summative Evaluation. Summative evaluation will be done by chiefly two methods:

1. observational data
2. achievement tests.

Part B: Formative Evaluation. Formative evaluation will presumably be on the basis of whether or not child performance is at criterion.

Part C: Program Evaluation. Details for specific program evaluation were not available.

Relationships to other projects:

The Laboratory has a very close and continuing on-going relationship with the autistic laboratory at George Washington University. They have also been given essentially carte blanche for experimental operation of an urban inner-city ghetto school in the St. Louis area. As this program progresses into its own phase three, it is slated to become inter-laboratory, as it will then use curriculum materials from both the aesthetic education program and the comprehensive school mathematics program in its operation.

Central Midwestern Regional Educational Laboratory (CEMREL)

Title:	Aesthetic Education Program
Principal staff:	
Purpose, objective, or goals:	To develop curriculum packages in aesthetic education, specifically in the subareas of visual arts, music, dance, literature, and theater for grades K through 12. The initial objective is a series of prototype packages for the primary level.
Importance, need, or justification:	The school has taken on an ever increasing responsibility for training the young since the beginning of the industrial revolution. In assuming this role, the school also assumed the responsibility for conveying the moral-aesthetic implications or consequences of a new knowledge. The Aesthetic Education Program was founded upon the premise that the sensibilities and capacities for judgments and effective action can be trained within the school.
Method, strategy, or design:	The relevant literature, research and other knowledge concerning the arts and art education will be surveyed to provida a basis for the curriculum development. Following that the curriculum content will be identified and analyzed in light of behavioral objectives and/or relevant research. Units of instruction will then be developed which reflect a wide range of art forms, styles, and periods of artistic development. Once units have been developed, learning packages will be compiled which will become the curriculum. Writing teams will be organized, one team for each age level, i.e., primary (K through 3), grades 4 to 6, junior high school, and high school.

Method, strategy, or design (continued)	Each team will include at least one representative from each of the art disciplines, i.e., visual arts, music, dance, literature, and theater. From August to December of 1969, two prototype packages will be developed for the primary level by the first writing team. In December, the curriculum writing team will begin full scale production to produce primary level packages. Following this initial work and/or work on other age levels, the other teams will be organized and work at other age levels will begin.
Characteristics of the sample:	The sample will include children in grades K through 3 initially, and grades K through 12 ultimately. The sample will be representative of the various levels of ability and needs of the total school population.
Characteristics of the users:	The users are presumed to be all persons working with children and youth in aesthetic education.
Expected end products:	End products are expected to be curriculum or curriculum packages for aesthetic education.
Evaluation procedures:	Part A: Summative Evaluation. A formal system of evaluation of the package has not been completed. It is expected that it will be similar to the CEMREL Comprehensive School Mathematics Program evaluation. Part of these packages will consist of a post-test. Other procedures for summative evaluation will be worked out as the program progresses. Part B: Formative Evaluation. Formative evaluation is to be done by informal means

Evaluation procedures (continued)	and will be continuous throughout the development of the curriculum. Part C: Program Evaluation. The CEMREL board of directors have appointed a national advisory committee composed of imminent aestheticians, philosophers, art educators, school superintendents, and psychologists who will monitor the aesthetic education program. These persons will provide input into the aesthetic curriculum development process on a regular basis and will also review the program periodically.
Relationship to other projects:	No detailed information was available concerning this section.

Center for Urban Education (CUE)

Title:	A Prekindergarten Curriculum
Principal staff:	Mr. Raymond Drescher, Assistant Director, Curriculum Development Committee; Dr. Sydney Schwartz, Liaison Person with Prekindergarten Curriculum Subcontract; Mr. Monroe Eidlen, Site Coordinator, Bridgeport, Connecticut Project
Purpose, objective, or goals:	To develop a prekindergarten curriculum for four-year-old children based on a combination or integration of experience, discovery, and playful manipulations on the part of the child and structured teaching on individually diagnosed lines on the part of the teacher within a preselected framework of intellectual goals and content.
Importance, need, or justification:	The Board of Regents of New York is officially committed to extending the school age to include at least a prekindergarten year. Similar policies are in the making in Connecticut and New Jersey. Although a significant number of prekindergarten curricula have been under development during the last five years, the Center for Urban Education felt, following a review of these, that few, if any, were specifically aimed at low income and minority group children in big city schools and that fewer were concentrating on the intellectual content of instruction. The center, therefore, elected to address itself to this specific need in their region.
Method, strategy, or design:	The Center for Urban Education has elected to subcontract this program component to Dr. Helen Robison of Teachers College,

Method, strategy, or design (continued)

Columbia University, and her staff. Dr. Sydney Schwartz serves as liaison between CUE and the Robison staff. In essence, the Robison staff writes curriculum and provides materials which are then taken to the field sites and tested. These materials include both curriculum guides involving detailed suggestions for implementation and other types of teacher assistance such as film, filmstrips, tape recordings and video tapes.

The basic unit of curriculum is a "structure model." Each of these structure models is, in essence, a learning episode involving some specific behavioral objectives and plans for their implementation as well as evaluation. One of the major foci on these structure models has been the improvement of language skills with young disadvantaged children.

A rationale for this curriculum is derived from a multitude of sources including:

1. Piagetian theory
2. multiple choices of the child (Montessori)
3. insights from recent linguistic theory
4. previous empirical studies of the principal investigator and others
5. key concepts necessary to beginning understanding of the structure of various academic disciplines derived from discussions with academicians from these various disciplines

This program was pilot tested last year in four classrooms in Harlem. The current year's work has involved a field test situation in two sites.

Characteristics of the sample:

The sample includes children of prekindergarten teachers in PS 63 and PS 140 in the Bronx and children of teachers in seven classes at Bridgeport, Connecticut, four of which are prekindergarten and three of which are kindergarten age. These children are all lower SES and predominantly black with some Puerto Rican children. The teachers whose children became subjects of this project were selected on various bases. In the Bronx, some teachers volunteered (those from PS 140) and some teachers were assigned by the principal (PS 63). In Bridgeport, children and teachers were selected on the basis of availability. A great many projects concerned with curriculum for young children are currently in operation in Bridgeport and all of these children and teachers were ruled out so that an "uncontaminated" sample could be collected.

Characteristics of the users:

The users were presumed to be all persons working with prekindergarten age children with special references to those working with young disadvantaged children.

Expected end products:

The expected end product is presumed to be a "new curriculum" based on intellectual stimulation for young children with concomitant teacher packages.

Evaluation procedures:

Part A: Summative Evaluation. Summative evaluation will be done from both descriptive data and from test data. Descriptive data will include tape and video tape recordings, as well as several observational instruments for both child and teacher behavior. Test data will include information from a basic test of language ability, a conceptual growth test, a test of academic aptitude, and a shortened version of the Binet.

Evaluation procedure (continued)

Part B: Formative Evaluation. Formative evaluation appears to be done on an informal basis between the curriculum team from the Robison staff and the teachers at the field test sites.

Part C: Program Evaluation. Specific mechanisms for program evaluation were not clear. It is assumed that once a subcontract has been completed the CUE has received a prekindergarten curriculum, this curriculum will then be developed by the CUE staff and made available for either extended field test or wide dissemination. At this point, the research and evaluation component of the central CUE staff will apparently enter the picture for further evaluation procedures.

Relationship to other projects:

The relationship between the subcontractors and the central CUE staff is maintained by Dr. Sydney Schwartz, the liaison person between these two. In addition, Mr. Monroe Eidlen maintains a relationship between the CUE and the Bridgeport Project which is a further test of the Robison Prekindergarten Curriculum.

Center for Urban Education (CUE)

Title:	Early Reading Experiment
Principal staff:	Mr. Raymond Drescher, Assistant Director, Curriculum Development Committee; Mrs. Marian Taylor, CUE Liaison Person with the Goldberg Project; Dr. Marion Goldberg, Subcontractor, and Principal Investigator
Purpose, objective, or goals:	The goals of the experiment are "to apply behavioral science research to an operating program in early instruction in order to later modify methods of teaching beginning reading."
Importance, need, or justification:	Certain minority group children in the CUE region of operation have been shown to experience increasing and cumulative reading deficits in comparison with their white counterparts. For example, the average Negro child progresses from being more than one and three-fourths years behind at the sixth grade to being three years behind at the 12th grade. The Puerto Rican child progresses from being three and one-tenth years behind at grade six to being four years behind at grade 12. These gaps also exist between the working class Polish-American or Italian-American and the white middle class child. The early reading experiment is addressing itself to a data base upon which to develop a curriculum to decrease the gap in literacy between whites and these minority groups.
Method, strategy, or design:	The basic strategy at this point appears to be a classic experiment in methodologies to teach reading which will form the data base upon which curriculum might be built. The research design is a particularly well formulated one addressed toward answering

Method, strategy, or design (continued)

a very large number of experimental questions, such as efficacy of different methodologies and various combinations of these, effect of length of treatment, retention of effects, etc. The treatment includes various permutations of the following:

1. perceptual language and concept development. This program stresses precursor skills rather than reading per se.
2. language experience--the basic materials of this program were booklets written by the pupils themselves
3. linguistics approach--several different marketed linguistics programs were compared in this program
4. initial teaching alphabet--this group employed a graphic system which attempted to regularize the match between sound and symbol
5. *traditional orthography--the standard* English alphabet was used in conjunction with a basal text book
6. Edison responsive environment--this program used the "talking typewriter" as an instructional tool.

Early reading instruction was started with some subjects at kindergarten and with others at the beginning of first grade. All instructions will continue through the second grade. Follow-up testing is planned periodically to the end of third grade and, if funded, to the end of sixth grade.

Horrendous problems have been experienced by this project in regard to problems often experienced by field studies such as

1. massive turnover of personnel at virtually all levels from the teachers through the superintendents of the districts

Method, strategy, or design (continued)

2. changes in the administrative policy of the school districts
3. significant changes in the actual physical plants of the school buildings themselves, etc.

Despite these, however, the project has attempted to maintain the original goals, objectives and designs as nearly as possible to their original form. Careful anecdotal records have been kept describing the necessary changes that have been made in the program.

Characteristics of the sample:

The sample includes 4,186 subjects from 148 classes in four boroughs in New York City: Manhattan, Bronx, Brooklyn, and Queens. The sample is largely composed of Negro children with some Puerto Ricans.

Characteristics of the users:

Users are presumed to be all persons working with kindergarten and preschool-aged children with these population characteristics.

Expected end products:

Expected end products are presumed to be large amounts of research and statistical data and reports re same which will provide a knowledge base upon which an early reading curriculum might be built.

Evaluation procedures:

Part A: Summative Evaluation. The basic evaluation design is a longitudinal one with test samples being taken at periodic intervals throughout the project. Evaluation of the experiment will be based on reading prognostic tests administered periodically, as well as specialized tests suited to each of the approaches.

Part B: Formative Evaluation. Since this project follows a classic experimental design, formative evaluation is not considered appropriate.

Evaluation procedures (continued)	Part C: Program Evaluation. The mechanisms for program evaluation were not clear. The initial agreement with the subcontractor apparently constituted an administrative commitment on the part of the Center for Urban Education for uninterrupted continuation of this project. Following the receipt of something like a final report from the subcontractor, program decisions may then be made concerning next directions.
Relationship to other projects:	An on-going relationship has been established and maintained with the New York City Public Schools where the research is being carried out. A liaison person operates with the project from the Center for Urban Education in the person of Mrs. Marian Taylor. Relationships to other projects within the center were not clear.

Center for Urban Education (CUE)

Title:	Instructional Profiles
Principal staff:	Mr. Raymond Drescher, Assistant Director, Curriculum Development Committee. The committee on Curriculum Development includes six staff assistants, five staff associates and two-and-a-half senior associates.
Purpose, objective, or goals:	The initial purpose of the Instructional Profiles was to create and test a series of teaching plans designed to help new inexperienced teachers conduct relevant effective instruction during their first year of work.
Importance, need, or justification:	One of the major problems faced by the New York City Schools is the retention of newly appointed teachers. The culture shock of new teachers most of whom come from middle class families when they enter schools serving poverty ridden areas has resulted in too many resignations in the system. By the same token, the system is not able to provide sufficient supervisory and consultive support to alleviate this problem. The system does provide regular curriculum guides but these documents are considered "too effective" in that they provide too many alternatives for the new teacher to use effectively and not enough of the daily nitty gritty techniques of how to get through a day. Instructional Profiles were designed to bridge this gap.
Method, strategy, or design:	The Center for Urban Education attempts to implement their goals by developing a series of model lesson plans which are put on cards which may be given to teachers. The model lesson plans contain guidance and materials for the 40 weeks of the full

Method, strategy, or design (continued)

school year. They contain an "instructional profile" of topics, together with directions about use, in the following subjects: mathematics, science, social studies, reading skills, music, health, aerospace, language arts, and art. In addition, instructional profiles will supply a support structure of workshops, teacher questionnaires, observation guides, and training sessions to aid the new teacher along the way.

As the profiles began to be designed during 1968, it became apparent that they could serve ultimately to unify the curriculum change efforts of the Laboratory. What began as a modest project aimed at resolving a limited operating problem now promises to become the vehicle for subsuming, integrating and, most importantly, installing the many curricular improvements being studied, invented and tested at the center. As they are being tried on newly arrived inexperienced third grade teachers during 1968 and 1969, the profiles will be simultaneously expanded to other grades and broadened to include more materials and back-up equipment and the fruits of field testing.

Characteristics of the sample:

The sample includes third grade teachers from the New York City Public Schools.

Characteristics of the users:

The users are presumed to be both new teachers and teacher-helpers including supervisors, administrators, principals, and others who work with new teachers.

Expected end products:

The expected end products are presumed to be:

1. a series of "instructional profiles" to be used with new teachers

Expected end products (continued)

2. possibly the development of a model for installation of others of the center programs.

Evaluation procedures:

Part A: Summative Evaluation. Details concerning summative evaluation were not clear.

Part B: Formative Evaluation. Formative evaluation will be done through:

1. feedback of training sessions
2. questionnaires
3. observations by five to six center personnel, as well as by other methods.

Part C: Program Evaluation. Details and mechanisms for specific program evaluation were not clear.

Relationships to other projects:

As has been previously mentioned, the instructional profiles were found to be a promising way to implement other programs, projects, activities now under way in the center. A working relationship is maintained with the New York City Public Schools where the field testing is in progress. Other relationships were not specifically spelled out.

Far West Laboratory for Educational Research and Development (FWLERD)

Title: Education Beginning at Three or Four Years of Age

Principal staff: Dr. Glen Nimnicht, Dr. Denis Thoms, Mr. Barry Barnes, Mrs. Betty Tuck, Mrs. Tanya Russell, Mr. Maurice Lyons, Miss Joan Abbey, Mrs. Bertha Addison, Mr. Arture Avine, Miss Mary Griffin, Miss Ann Fitzgibbon, Mr. Arthur Walker, Mr. Ronald Warner

Purpose, objective, or goals: The major purpose of this project is "to create, test, and evaluate a full program of autotelic, self-pacing education, carrying a child from age 3 through age 9." The project is composed of five components which have the following immediate objective:

Component 1: Development of materials and procedures for education of three- and four-year-olds.

Components 2, 3, and 4: Development of materials and procedures for education from kindergarten through third grade (each of these three components is separately funded).

Component 5: Development of materials and procedures to assist parents in helping their children achieve specific objectives.

Importance, need, or justification: Behavior scientists have discovered that young children are capable of extensive learning at a much earlier age than was previously supposed. They have also discovered that prolonged environmental deprivation at an early age has a lasting negative effect on development. These discoveries have led to the proliferation of preschool education programs which vary widely in their goals, research base and overall quality. The Far

Importance, need, or justification (continued)

West Laboratory assumes "that the present interest in expanding preschool educational opportunities will increase; that the current research indicates a great need for early education, at least for deprived children; that some research and development efforts to develop suitable programs are promising; and that the possible effect upon the nation's educational system makes this development one of the major concerns in education."

Method, strategy, or design:

The strategy for components 1, 2, 3, and 4 is based upon the New Nursery School model. This model is an eclectic one based upon use of autotelic responsive environments, similar to those of O. K. More. An autotelic activity is a self-rewarding activity with no rewards or punishments that are not a part of the activity itself.

A responsive environment has the following characteristics:

1. it permits the learner to explore freely
2. it informs the learner immediately about the consequences of his actions
3. it is self-pacing with events happening at a rate determined by the learner
4. it permits the learner to make full use of his capacity for discovering relations of various kinds, and
5. its structure is such that the learner is likely to make a series of inter-connected discoveries about the physical, cultural, or social world.

The Far West Laboratory is field testing a model Head Start Program based on the New Nursery School model and developing a model Follow-Through Program for kindergarten through third grade as an extension of that model. Component 1 involves the

Method, strategy, or design (Continued)

training of Head Start teachers and aides to follow the responsive environment model using the mini-course which is an adaptation of the micro-teaching model developed by Allen et al at Stanford University (Allen and Fortune, 1965; Allen and Young, 1966). In the mini-course model, the teacher first views an instructional lesson but describes and shows samples of one to three specific classroom skills. The teacher then views on film a brief model lesson in which a model teacher incorporates the skills described into a lesson. The teacher's attention is focused on the skills to be learned and he is trained to recognize the skills and discriminate among them. Then the teacher prepares a short lesson which is based on his current class work and designed to apply the skills presented in the instructional and model lessons. The teacher teaches this lesson in a micro-teaching setting making a video tape recording of his own performance. This video tape is replayed and the teacher evaluates his use of the learned skills. He then replans the lesson, reteaches it to another group of pupils and again records and evaluates his performance. Components 2, 3, and 4 are concentrating on curriculum development via the use of learning episodes which specify a procedure for teaching a child some basic skill component in such a fashion that a parent, aide, or teacher could take the written plan for the episode and teach the skill to the child in a short period of time.

Component 5 involves parent-child education. This component is developing a model parent education toy library which contains educational materials for use at home or in preschool and kindergarten situations. The library is specifically intended for use by parents whose children are not entered in

Method, strategy, or design (Continued)	Head Start and Follow-Through Programs. The parent-child education program will consist of 12 weekly two-hour sessions designed to teach the parents some basic concepts pertaining to the development of a child's intellect and his basic self concept and to instruct the parents in the use of toys and games to help a child learn specific skills or concepts.
Characteristics of the sample:	Components 1 through 4: The sample consists of disadvantaged children age three years through nine years. Component 5: Middle class children who do not qualify for Head Start Programs are being used.
Characteristics of the users:	Parents and educators of children age three through nine years, both disadvantaged and advantaged.
Expected end products:	The expected end product is a curriculum of self-paced education for children from age three through age nine.
Evaluation procedures:	The following 12 stages are involved in the product-development activity of the laboratory: (Further information was not available in documents on hand.) 1. Research and Information Collecting 2. Planning 3. Develop Preliminary Form 4. Preliminary Field Test 5. Main Product Revision 6. Main Field Test 7. Operational Product Revision 8. Operational Field Test 9. Final Product Revision 10. Dissemination and Distribution 11. Prepare and Distribute Report 12. Implementation

South Central Regional Educational Laboratory (SCREL)

Title: Compensatory Kindergarten (Head Start) (Ava, Missouri)

Principal staff: Mrs. Kay Bassore, Coordinator

Purpose, objective, or goals: To develop and implement a curriculum for kindergarten age children based on the diagnostic teaching approach of Hodges, McCandless and Spicker.

Importance, need, or justification: Firstly, there are few tested and evaluated curricula available for preschool aged children. Secondly, several curriculum models which have been proposed are in need of further field testing. It appears that the Ava project is addressing itself to these needs.

Method, strategy, or design: Head Start classes are supported through the local OEO in the regular manner but the program is actually implemented by SCREL. In developing the curriculum to be used a series of objectives both general and specific were developed by a team including the Ava Head Start teachers, Mrs. Bassore, Dr. Walter Hodges, Mrs. Lisha Ann Hodges, Mrs. Valinda Parrish and others. These objectives were then put in developmental order and were implemented via the "story of the week" approach used by Hodges, McCandless and Spicker. It was found that it was necessary to do a great deal of inservice training with the teachers in order to illustrate and implement the curriculum. Mrs. Bassore met regularly once weekly with the teachers to review problems of the past week and plan for the coming week. Although a schedule was drawn up for the curriculum, it was flexible and the teachers were free to either follow it or not as the needs of the classroom dictated. Many materials were used to implement the curriculum including PLDK, Matrix Games, Language Lottos, Listening Centers, Fine Motor Lessons, and blocks, puzzles, etc.

The SCREL program has been phased out and will not be continued in Ava during the coming year. This school district, however, has been picked up by Follow Through and is to be supervised by Dr. David Wiekart and his team. No parent involvement component was implemented as part of the SCREL program in Ava this year, but one was provided by the local Head Start offices.

Characteristics of the sample: Four Head Start kindergarten classes of 20 children each were used as the sample. Two comparison groups were used, one a regular Head Start in Mansfield, Missouri, some 15 miles away and the second a middle class kindergarten in Ava.

Characteristics of the users: The users are presumed to be all persons working with kindergarten age children in an educational setting.

Expected end products: It is not clear exactly what end products were expected from this project but it is assumed that a curriculum for kindergarten age Head Start children based on the diagnostic teaching model should have emerged.

Evaluation procedures: Part A: Summative Evaluation. The summative evaluation was a pre-post-test design and utilized the WPPSI, the French Picture Test of Intelligence, and The Preschool Attainment Record. The Brown Self-Concept Test was administered in the fall but discontinued in the spring.

Part B: Formative Evaluation. The team which developed the objectives for the curriculum also developed a check list which was to be administered periodically by the teachers. Video tapes of the teachers were done on at least one occasion during the year. Unfortunately, however, it could never be arranged for the teachers to see these tapes and exactly what use was intended of them was unclear.

Part C: Program Evaluation. "Process evaluation" was done peri by Dr. Winston T. Wilson, consultant from SCREL. He came to Ava once a month and observed in the classrooms and wrote up his observations and impressions presumably covering such things as progress since his last visit, needs, gaps, etc.

Other details concerning program evaluation were not clear.

Relationships to other projects:

The Ava project maintained an active relationship with the University of Missouri in Springfield, and utilized the services of the University Laboratory School and one of their teachers frequently for inservice training purposes.

As outlined in the proposal, the SCREL team at Ava was to have had a partner relationship with the local OEO office implementing the Head Start program at Ava. Apparently some problem did develop in establishing and maintaining this relationship

South Central Regional Educational Laboratory (SCREL)

Title: Day Care Program

Principal staff: Dr. Tish Jones, Director, Mrs. Dolly Moseley, evaluator, Mrs. Phyllis Melton, curriculum writer

Purpose, objective, or goals: To develop and implement an educational component of a regular Day Care program.

Importance, need, or justification: Many Day Care operations are simply babysitting services. In view of recent evidence concerning the crucial nature of these early years in regard to later educational achievement, some exploration needs to be undertaken regarding the educational possibilities within this setting. The Day Care component of SCREL appears to be addressing itself to this need.

Method, strategy, or design: The SCREL group works in several OEO supported Day Care programs in the Little Rock, Arkansas area. They have contracted to implement an educational component for research purposes during part of the Day Care day. Curriculum writers at SCREL write lessons for four different learning areas of a Day Care Center:

1. Language and listening
2. Story and art
3. Motor training
4. Visual discrimination

These lessons are geared to small groups and the children rotate to the various areas at different times during the morning. The lessons are then taken by the curriculum writers to the center where they are discussed with the teachers and the writers attempt to implement them through inservice training with the teachers. Most of the Day Care "teachers" are untrained, local indigenous personnel.

Their educational level ranges from one who has a college degree to one who is illiterate. The language lessons follow generally but not specifically the Bereiter-Engleman model. They also include such materials as the PLDK and the Listen, Mark and Say Program. The story and art lessons are based on the story-of-the-week approach from the Hodges, McCandless and Spicker model. There is some attempt to integrate the story and art lessons with the language lessons. The visual discrimination lessons are based more on drill. The SCREL staff became involved informally with the OEO supported parent involvement components of the Day Care Centers. As a result of this informal involvement, they have been asked to work with the parent group of the local CAP in implementing for the upcoming year a Follow Through Project in the local elementary school into which the Day Care Centers feed. The parent group is currently in the process of selecting a Follow Through model for implementation with their children.

Characteristics of the sample: The sample was comprised of lower SES Negro children ages 3-5 enrolled in local OEO supported Day Care Centers. Comparison groups included Caucasion children as well as upper middle SES.

Characteristics of the users: The users are presumed to be all persons working in Day Care programs for young children.

Expected end products: The expected end product is presumed to be a curriculum for use in implementing an educational portion of a Day Care program. An "Installation Manual" is currently in process which should be available at the end of the summer concerning the implementation of an educational component of a Day Care Center. This manual will also include cost projections.

Evaluation procedures:

Part A: Summative Evaluation. The exact methodology or design used in the evaluation of the Day Care program was not entirely clear. Massive batteries of tests were administered to the children at the beginning of the year including the Wechsler Preschool and Primary Scale of Intelligence, the Stanford-Binet, the French Picture Test of Intelligence, Peabody Picture Vocabulary Test, the Illinois Test of Psycholinguistics Ability and others. Post-testing was scheduled to begin in the early summer 1969.

Part B: Formative Evaluation. The process of formative evaluation was not entirely clear. It appeared to be handled on an informal basis by the curriculum writers.

Part C: Program Evaluation. The process for program evaluation was also not clear.

Relationships to other projects:

The Day Care Component has had a strong and continuing relationship with the local OEO office. They are currently very involved in an informal way with the parents group of the local CAP agency in working with them toward the development of their Follow Through program for the upcoming year.

South Central Regional Educational Laboratory (SCREL)

Title: Saturday School (Negro, Shreveport, Louisiana)

Principal staff: Mrs. Valinda Parrish, coordinator, Dr. Wilson, consultant, Mrs. Lee, home visitor, Mrs. Norris, teacher, Mrs. Mills, aide, Mrs. Wilson, teacher, Mrs. Jones, aide, Dr. Hayes, consultant

Purpose, objective, or goals To develop and implement a home school coordination model.

Importance, need, or justification: Many culturally deprived or lower SES children and their parents in the United States do not enjoy a good relationship with their school, do not know how to extend learning activities into the home. Some exploration needs to be undertaken concerning methods to effectively bridge this gap. The SCREL Saturday School at Shreveport appears to be addressing itself to this need.

Method, strategy, or design: In order to achieve their objectives, SCREL operates two coordinated programs for two hours on Saturday morning at a local elementary school in Shreveport. One program is for three and four-year-old children and follows an educational stimulation model with its focus on language development. Following an exploratory or free play period, the children have an opening ceremony, a musical activity, a PLDK lesson, some art activities, an outdoor activity, a snack, and finish with a story.

Concurrently, the second program is for the parents of these children and is run by the home visitor. The activities during the parents portion of the program include:

1. description and discussion of what is taking place in the children's program during the morning

2. description and discussion of activities which the parents may do with the children at home during the week to reinforce and extend these lessons,
3. some discussion of problems which parents experience with children and ways and means of dealing effectively with these, and
4. make-and-do type activities which include:
   a. things to be used at home with the children and
   b. some things which the parents make for themselves.

The home visitor is a local indigenous paraprofessional with a high school education. In addition to the Saturday morning program, she makes periodic visits to the homes of the parents. She does not take specific materials or curriculum into the home but visits more as a supportive type activity and as the liaison link between the home and the school in order to get the program started. The frequency of her visits has decreased as the year has progressed.

Characteristics of the sample:

The children's program includes two classes of 15 children each. The children are five-year-old lower SES Negro children. All parents of these children are eligible for the parents group. Parent attendance during the past year has consistently included 21 or more mothers and at least one father at each meeting.

Characteristics of the users:

Users are presumed to be any persons wishing to implement a closer tie between the home and the school with regard to this specific target population.

Expected end products:

Expected end products are presumed to include:

1. a tested model for home-school coordination,

2. curriculum activities for use with the children in this model
3. curriculum activities for use with parents in implementing this model

Evaluation procedures:

Part A: Summative Evaluation. In order to measure the overall effects of the program on the children, the following measures will be used: Wechsler Intelligence Scale for Children, Peabody Picture Vocabulary Test and the Preschool Self-Concept Test. Measure of program effects with the parents will be done by use of a staff developed attitude scale and an achievement test of criterion tasks. The basic design is a pre- post-test one.

Part B: Formative Evaluation. The process of formative evaluation was not clear.

Part C: Program Evaluation. The process of program evaluation was not clear. Dr. Winston T. Wilson comes regularly as a consultant to the project to observe the child and the parent activities and prepares written reports which are submitted to the SCREL coordinator, Mrs. Parrish. These reports are presumed to include such things as progress since the last visit, implementation of the program, gaps, needs, etc.

Relationships to other projects:

A cooperative relationship exists between the SCREL Saturday School and the Shreveport Public School in regard to use of facilities and the sharing of some consultation personnel such as Dr. Hayes. A cooperative relationship also exists between SCREL and SEDL at Austin in that the facilities used on Saturday morning by SCREL are the same ones used and supplied by SEDL during the week.

South Central Regional Educational Laboratory (SCREL)

Title: Saturday School Ozarkan (Prairie Grove, Arkansas)

Principal staff:

Purpose, objective, and goals: To develop and implement a home school coordination model.

Importance, need, or justification: Many culturally deprived or lower SES children and their parents in the United States do not enjoy a good relationship with their school, do not understand its activities and do not know how to extend learning activities into the home.

Method, strategy, or design: In order to achieve their objectives, SCREL operates two coordinated programs for two hours on Saturday morning at Prairie Grove, Arkansas. One program is for five-year-old children and follows an educational stimulation model. Time is scheduled for

1. exploration
2. socio-durmatic play
3. structured play with three dimensional materials
4. choral reading of nursery rhymes and finger plays
5. improving visual, tactile and auditory discrimination skills
6. motor development
7. self expression through art

Ninety-seven behavioral objectives have been specified in relationship to the curriculum.

Concurrently, the second program is for the parents of the children and is run by the home visitor. The activities during the parent's portion of the program include:

1. description and discussion of what is taking place in the children's program during the morning
2. description and discussion of activities which the parents may do with the children at home during the week to reinforce and extend these lessons
3. some discussion of problems which parents experience with children and ways and means of dealing effectively with these
4. make-and-do type activities which include:
    a. things to be used at home with children
    b. some things which the parents make for themselves

Characteristics of the sample:

Thirty-six Caucasion five-year-olds were enrolled in the Saturday school. Twenty-one of the 36 or 58% were considered to be disadvantaged on the basis of OEO and ESEA Title I Guidelines. All parents of these children are eligible for the parent's group.

Characteristics of the users:

Users are presumed to be any persons wishing to implement a closer tie between the home and the school with regard to this specific target population.

Expected end products:

Expected end products are presumed to include:

1. a tested model for home-school coordination
2. curriculum activities for use with the children in this model
3. curriculum activities for use with parents in implementing this model

Evaluation procedures:

Part A: Summative Evaluation. In order to measure the overall effects of the program on the children, the following measures were used: Wechsler Intelligence Scale for Children, Peabody Picture Vocabulary Test and the Preschool Self-Concept Test. Measure of program effects with the parents was done by use of a staff developed attitude scale and an achievement test of criterion test tasks. The basic design is a pre-post-test one.

Part B: Formative Evaluation. The process of formative evaluation was not clear.

Part C: Program Evaluation. The process of program evaluation was not clear.

Relationships to other projects: No detailed information was available re this area.

South Central Regional Educational Laboratory (SCREL)

Title:	Bilingual Family School
Principal staff:	Florence McCormick
Purpose, objective, or goals:	Many culturally deprived or lower SES children and their parents in the United States do not enjoy a good relationship with their school, do not understand its activities and do not know how to extend learning activities into the home. This appears to be even more true of Indian populations where added bilingual factors impede such relationships. Some exploration needs to be undertaken concerning methods to effectively bridge this gap. The Bilingual Family School in Adair County, Oklahoma appears to be addressing itself to this need.
Method, strategy, or design:	The Bilingual Family School follows the same general model as the Saturday School in other components of the SCREL Program. It has the same general objectives and strategy. In addition to these objectives and strategies, however, a bilingual approach was combined with the home school coordination approach. A second difference between the Bilingual Family School and the Saturday Schools is that three of the Cherokee mothers teach in the children's portion of the program in addition to being participants in the parent's portion of the program.
Characteristics of the sample:	The sample included nonreservation Cherokee Indians in Adair County, Oklahoma and their preschool aged children.
Characteristics of the users:	Users were presumed to be any persons wishing to implement a closer tie between the home and the school with regard to this specific target population.

Expected end products:

The expected end products are presumed to include:

1. a tested model for home school coordination utilizing a bilingual approach
2. curriculum activities for use with children in this model
3. curriculum activities for use with parents in this model

Evaluation procedures:

The evaluation procedures for this program were not clear.

Relationships to other projects:

The Bilingual Family School was an attempt to further utilize and field test the home coordination model as used in the Saturday School programs. Relationships were established and maintained with the Cherokee tribe in Oklahoma. Other relationships were not specified in the information available.

Southeastern Educational Laboratory (SEL)

Title: Communication Skills Development Program

Principal Staff: Dr. Azalia Francis

Purpose, objective, or goals: To alleviate educational deprivation in the Southeast by increasing the impact of education on culturally disadvantaged pupils speaking nonstandard varieties of English, through accelerated development of standard language behavior among them, and thereby increase the attainment of reasonable educational achievement goals.

Importance, need, or justification: Culturally disadvantaged children in the Southeast speak nonstandard varieties of English which penalize them when they enter an academic situation where standard English is used. It is postulated that as they increase their communication skills repertoires, their chances for educational success will increase.

Method, strategy, or design: To achieve their goal, the efforts of SEL are directed toward four targets: classrooms, pupils, teachers, and the community. The basic strategy is to use an experimental approach with the development of pupil and teacher materials and processes while continuing to analyze classroom and community language behavior for refinement of materials for schools serving disadvantaged pupils.

1. Classroom Component--is designed to specify the components of the linguistic behavior of Southeastern school children and to determine how it differs from that standard culture through use of video taping equipment in classrooms. The video tapes are being subjected to multidisciplinary analysis by linguists, psychologists, sociologists, anthropologists, educators, etc.

Method, strategy, or design (continued)	2. Pupil Component--is designed to develop curriculum supplementary materials and strategies to solve extant language and communication problems among disadvantaged pupils in the schools for which no suitable materials now exist. Instructional units are being designed and field tested under the Multisensory Language Development Project (MLDP). MLDP is a language enrichment program of approximately one hour per day for 72 days throughout first and fourth grades. The program uses an experiential approach to language. (See sample lesson in the appendix.) 3. Teacher Component--is designed to develop a variety of techniques for helping teachers of disadvantaged pupils to evaluate their teaching methods with respect to developing communication skills. The primary procedures center around use of video tapes of teachers behavior. 4. Community Component--is designed to observe, analyze and describe the regional and social dialects of American English spoken in the eastern gulf states, i.e., the states of Georgia, Florida, Alabama, Mississippi, and Tennessee, and to prepare a linguistic atlas for this area.
Characteristics of the sample:	The population includes culturally disadvantaged lower SES residents of the southeastern United States with emphasis on the Negro. The pupil component serves first and fourth grades.
Characteristics of the users:	Educators of children who reside in the Southeast and speak a nonstandard dialect.
Evaluation procedures:	See evaluation model following.
Relationship to other projects:	Not known.

Southeastern Educational Laboratory (SEL)

Title:	Interpersonal Relations Component
Principal staff:	Dr. Wright, Mrs. Camille Jeffries, Mr. John Winstead
Purpose, objective, or goals:	To increase the impact of education for disadvantaged pupils through enhancement of pupils attitudes toward self, others, and environment and, thereby increase their personal effectiveness in their educational achievement.
Importance, need, or justification:	The theoretical rationale for this program is not clear from the PPBR.
Method, strategy, or design:	The basic strategy of the program is the use of an experiential approach with each of three target populations--faculty, pupils, and parents. In general, it involves the development of materials and processes that foster self capacity for growth and change. Activities include in-depth pupil involvement in the science of behavior, the development of in-service teachers as teacher leaders with special competencies in teaching interaction analysis and in leading special groups in interpersonal relations and the development of parents and paraprofessionals able to teach others behavior modification techniques. The faculty development component involves use of the Human Development Institute Relationship Improvement Program (HDI-RIP), and Sensitivity Training. The HDI-RIP is a programmed course for the teaching of improved interpersonal relations. The Pupil Development Component is developing materials in behavioral science, mental health and life adjustment for grades one and two and seven and eight. In the future they will develop programs for grades one through 12. The lessons are designed to teach children causal thinking in human relations.

Method, strategy, or design (continued)	The Parent Involvement Component attempts to improve the quality of home-school-community relationships by involving parents in new school programs teaching parents behavior modification techniques, developing training programs for paraprofessionals so they can teach behavior modification to other parents, etc.
Characteristics of the sample:	The present sample includes disadvantaged youngsters in grades one and two and grades seven and eight.
Characteristics of the users:	The users are expected to be teachers who teach disadvantaged youngsters in grades one through 12.
	(Note: Current information indicates that this program will be phased out for the 1970 fiscal year.)

Southeastern Educational Laboratory (SEL)

Title: Rural Isolated Schools

Principal staff:

Purpose, objective, or goals: To develop model projects and comprehensive educational plans designed to accelerate the learning of disadvantaged pupils in rural isolated schools.

Importance, need, or justification: A study conducted by the desegregation center of the University of Miami identified as most crucial the following problems of rural isolated school systems:

1. communication skills
2. developmental reading
3. preschool training
4. follow through
5. drop outs
6. innovative teaching approaches (team teaching, nongradedness, flexible scheduling, paraprofessional assistance)
7. in-service training

Method, strategy or design: This project consists of two components:

1. design and implementation
2. materials production

Representatives from local, state, national and higher educational agencies functioned as a task force to identify needs and priorities of a school system. Seven model programs have been developed which coincide with the seven major needs identified by the Miami study. A school system may choose one or any number of these programs to implement and SEL will aid in the implementation and evaluation. SEL will develop and refine a model for comprehensive educational

Method, strategy or design (continued)	planning for rural isolated school districts and they will then design an evaluative plan that includes the assessment programs of SEL and the local educational agencies.
Characteristics of the sample:	Pupils, primarily Negro, in rural isolated school districts in the southeastern United States.
Characteristics of the users:	The potential users are presumed to be the 242 school districts in the 17 United States southern and border states identified as rural isolated majority Negro populated.
Expected end products:	1. A guide for comprehensive educational planning for rural isolated schools 2. A bank of seven prototype models designed for Title III projects focusing on needs of rural isolated schools 3. Evaluative instruments for gathering demographic information relative to individual school district personnel and students.
Evaluation procedures:	See evaluation model following.

Southeastern Educational Laboratory (SEL)

Title:	Readimobile Project
Principal staff:	Mr. Rex Toothman, Mrs. Elinor Elfner, Mr. Mike Griffy
Purpose, objective, or goals:	To provide readiness experiences to four- and five-year-old culturally disadvantaged children located in geographically isolated areas which will enable them to accelerate their learning when attending school.
Importance, need, or justification:	Preschool learning experiences have been found beneficial to the progress of disadvantaged children in primary grades. Consequently, the Readimobile Project is being developed as one which might contribute significantly to the overall mission of the Laboratory, the elimination of educational deprivation in the Southeast.
Method, strategy, or design:	The Readimobile Project has the following specific objectives: a. To develop in preschool children an awareness of the dimensions of the world and their place in it b. To help preschool children develop an awareness of their surroundings and a feeling of their own identity c. To develop creativity and physical coordination in preschool children d. To provide preschool children with readiness experiences which will make them more receptive to formal school programs e. To assist preschool children in developing a pattern of socially accepted conduct and the ability to play and work with other children f. To establish communication with isolated rural parents and gain their support and interest in the education of their children

Method, strategy, or design (Continued)

The objectives are being achieved through the following procedures:

a. By showing films and filmstrips recommended by specialists in early childhood education
b. By use of books most of which are coordinated with the films and filmstrips
c. By introducing art activities, music, drama, games, and crafts which will reinforce the films and stories
d. By discussing the films and stories using a traveling microphone and recording the discussion for playback purposes
e. By introduction of creative playthings and devices which stress various aspects of cognitive development
f. By planning special activities which give an opportunity for parental participation and involvement.

A special project involving the use of one Readimobile is being carried out in Wakulla County, Florida. This project is designed to evaluate whether or not mere participation in the Readimobile is important or whether the type of Readimobile program is important. The particular type of program being evaluated is based on the Learning to Learn materials developed by Dr. Herbert Sprigle at the Learning to Learn School in Jacksonville, Florida and marketed by Science Research Associates. The children will be matched on age, sex, race, and Binet IQ and divided into the following three experimental groups:

Group I--learning to learn with parent involvement
Group II--learning to learn without parent involvement
Group III--General cultural enrichment program
Group IV--An additional comparison group will serve as a distal control

Evaluation procedures:

The following dependent measures will be used in evaluating the Wakulla Readimobile Project:

1. Stanford-Binet LM short form
2. Illinois Test for Psycholinguistic Abilities
3. Caldwell Preschool Inventory
4. Project Head Start Behavior Inventory
5. School Readiness Test

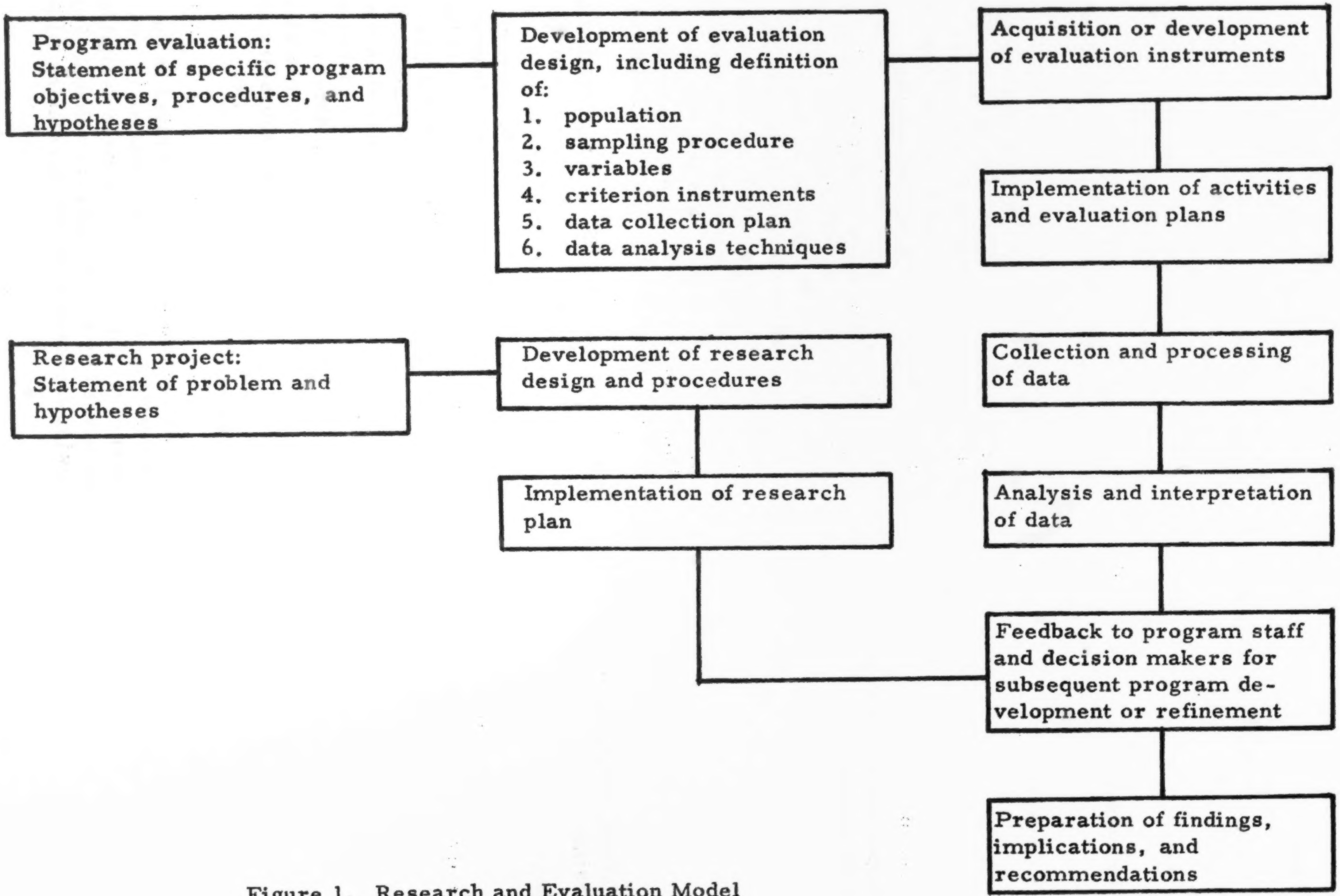
Program evaluation:
Statement of specific program objectives, procedures, and hypotheses
Development of evaluation design, including definition of:
1. population
2. sampling procedure
3. variables
4. criterion instruments
5. data collection plan
6. data analysis techniques
Acquisition or development of evaluation instruments
Implementation of activities and evaluation plans
Collection and processing of data
Analysis and interpretation of data
Feedback to program staff and decision makers for subsequent program development or refinement
Preparation of findings, implications, and recommendations
Research project:
Statement of problem and hypotheses
Development of research design and procedures
Implementation of research plan

Figure 1. Research and Evaluation Model

Southwestern Cooperative Educational Laboratory (SWCEL)

Title:	Oral Language Program (OLP)
Principal Staff:	Dr. Robert Reback, Mr. Robert Ebert, others
Purpose:	To produce curriculum materials and teaching methods that will raise the oral language achievement levels of first grade (or preschool, if appropriate) children who must learn English as a second language.
Importance, need, or justification:	Children from cultural backgrounds which differ from the modal culture in the United States have been found to be linguistically handicapped insofar as dealing with materials presented in public schools is concerned. If their communication problems could be alleviated, it is felt that they would make better progress in the public education systems in the United States.
Method, strategy, or design:	Lessons from the USOE-UCLA "Guide for Teaching English as a Second Language to Elementary School Children" were pilot tested on a small scale (N=50, approximately) in fiscal year 1967 with Spanish speaking and Navaho children enrolled in the summer-fall 1967 Albuquerque preschool Head Start programs. Modifications were made in the materials based on these experiments and a field trial was initiated in the fall of 1967. Following this trial, the USOE-UCLA materials were extensively modified and revised in the laboratory and field tested again in 1968-69 in 144 classrooms. A mini-school facility is operated at the laboratory, which accommodates 15 five-year-old children who are made available as needed by a local nursery school. Following feedback from teachers using OLP

Method, strategy, or design (continued)

in their classrooms, research staff observers and others, continued revision and modification of the OLP lessons is done in the mini-school.

Additional lessons have been designed using English to discuss culturally relevant topics. The so-called Native Tradition Lessons constitute a significant revision of USOE-UCLA lessons in the SWCEL application of these guides to the oral language problems of the Navaho speaking children.

Characteristics of the sample:

The sample consists of Navaho, Pueblo, and Mexican-American children in 144 kindergarten and first grade classrooms.

Characteristics of the users:

The users are presumed to be all persons working with bi- or multi-cultural students who are learning English as a second language.

Expected end products:

End products of the OLP per se are expected to be:

1. Approximately 147 lessons of the OLP.
2. A small number of pre-lessons to accompany the OLP which will teach the relevant response patterns and behaviorals necessary to enter the OLP.
3. A small number of "Native Tradition" lessons to extend and supplement the OLP and increase its relevance.
4. A teacher's manual to accompany the OLP.

Evaluation procedures:

Part A. Summative Evaluation.

Summative evaluation will be done using:

1. The Michael test (specific to OLP)

Evaluation procedures (continued)

2. Content tests inserted following a specific number of lessons and developed during the development of the lessons, and
3. Other summative evaluation measures which are yet to be specified, but are currently in the developmental process.

Part B. Formative Evaluation.

Formative evaluation is done through a number of sources including:

1. Feedback from teachers using OLP
2. Mini-school tryouts
3. Research staff observers
4. Child performance on the content tests under development.

Part C. Program Evaluation.

Details concerning program evaluation were not entirely clear. They did appear, however, to be related to the other evaluation strategies concerning the development of the lessons per se with decisions made on the basis of these results.

Relationship to other projects:

The OLP component maintains an active relationship with a large number of schools and school districts across several different ethnic groups throughout the geographic region of the SWCEL. In fact, due to the large number of schools involved, an administrative unit is given responsibility for establishing and maintaining a high level of cooperation these liaison sites.

Southwestern Cooperative Educational Laboratory (SWCEL)

Title: Reading Explorations

Principal staff: Dr. Mavis Martin, Mrs. Marion Tonjes, Mrs. Madelaine Speiss

Purpose: To develop a developmental reading program, including entry skills to reading, reading readiness, and formal reading instruction, for children who must learn English as a second language.

Importance, need, or justification: Certain communication skills are essential for success in the initial grades of public schools. Oral language is the primary mode of communication, and sequentially, reading is the second communication skill essential to school achievement.

Method, strategy, or design: The Reading Exploration component is divided into three major activities:

1. Entry Skills to Reading. The strategy of this activity is to analyze the OLP to see what skills are required for successful entry into the program. This activity will then produce materials designed to teach and/or train these skills. Existing materials and programs will first be surveyed to see which are appropriate and others will be developed as needed following this survey. Early work from this component has focused on classroom management strategies such as reinforcement procedures and attending behavior.

2. Formal Reading Readiness. This activity will extend the skills taught in the Entry Skills to Reading phase and will move into formal reading readiness skills. Survey of on-the-shelf reading programs, critical evaluation of

Method, strategy, or design (continued)

currently available programs, and examination of SWCEL and other research for prescriptive guidelines will contribute to the selection of skills which will be the content of this program. A curriculum description, identification of skill activities and behavioral characteristics, the sequence of lessons and appropriate teacher training manuals and programs will be developed and tried.

3. Explorations Relative to Formal Reading Instruction. Criteria will be developed and desirable aspects described of schoolwide reading programs for the people who begin school as non-English speakers. Criteria will be developed for currently existing reading programs and materials. A criteria check list will be distributed to assist schools in an appropriate and improved selection of materials. Comparative evaluations of relatively untested reading programs currently used in the region will be initiated.

Characteristics of the sample:

The sample is presumed to include children who will be learning English as a second language in the age range from approximately 3 or 4 to approximately 8, i.e., prior to entry into OLP through formal reading instruction.

Characteristics of the users:

Users are presumed to be all persons working with children who will be learning English as a second language.

Expected end products:

End products are expected to be:

1. Entry Skills to Reading will produce
    a. an analysis of skills required to successfully enter the OLP
    b. detailed lesson plans for training these entry skills.

Expected end products (continued)

2. In Formal Reading Readiness, a curriculum description, an identification of skill activities and behavioral characteristics, a sequence of lessons with appropriate teacher training manuals and programs will be developed and tried.

3. Explorations Relative to Formal Reading Instruction. Products from this component are expected to include:
   a. criteria for currently existing reading programs and materials
   b. a criteria check list to be used by schools in making appropriate and improved selection of reading materials
   c. comparative evaluation data on relatively untested reading programs currently in use throughout the SWCREL region.

Evaluation procedures:

Evaluation procedures are not entirely clear in either summative, formative, or program aspects. Although general criteria appear to have been established as stated above, specific implementation of these goals and objectives appears vague and poorly defined at present.

Relationship to other projects:

No detailed information was available concerning this section.

Southwest Cooperative Educational Laboratory (SWCEL)

Title: Sociocultural Factors

Principal staff: Dr. Henry Burger, Mr. Edward Cassanentes, Mr. Guy Watson, others

Purpose: To provide social and cultural data on existing differences between the populations for which OLP is being developed and that of the dominant mainstream.

Importance, need, or justification: Research has consistently shown that learning most often takes place as a direct function of the relevance and meaning of teaching materials, procedures, techniques, etc., to the learner. It was felt that this was especially true with the ethnic minority groups toward whom the OLP is directed. The sociocultural factors component was designed to provide information concerning these factors which would feed into the OLP and reading exploration developments.

Method, strategy, or design: An applied cultural anthropologist and a sociologist were employed by the laboratory to study, classify, and describe subcultural differences and relevant characteristics of the populations toward which OLP is directed. A number of different techniques would be used including survey of existing literature and data, observational techniques, other procedures from both anthropology and sociology.

A study was conducted of the dominant perceptional modelality of children from different cultures focusing primarily on auditory versus visual perceptions. Differences were indeed suggested by the study and a more detailed study was planned to replicate and reliably demonstrate these results. If these results are substantiated, they will provide valuable information for the

Method, strategy, or design (continued)	development of the actual OLP lessons, as well as other lessons and materials designed to support the OLP.
Characteristics of the sample:	The sample is presumed to include persons from the various ethnic minority groups toward which the OLP is developed, specifically at present the Pueblo and Navaho Indians and Mexican-Americans.
Characteristics of the users:	Users are presumed to be all persons working with these ethnic minority groups, generally, and more specifically, persons developing materials for use in teaching English as a second language to young children from these subcultures.
Expected end products:	End products are expected to be data analyses and research reports concerning the specific questions asked of the ethnic minority groups toward whom the OLP is directed.
Evaluation procedures:	Evaluation procedures for this component were not clear in either summative, formative, or program aspects.
Relationship to other projects:	This component was presumed to have an intimate relationship to the development of the OLP in that its data was presumed to feed into the OLP and its development. In addition, other relationships would need to be established between the subcultures which were to be studied. No other information concerning this section was available.

Southwest Educational Development Laboratory (SEDL)

Title: Early Childhood Education Component

Principal staff: Vance Littleton, Coordinator

Purpose, objective, or goals: To develop several alternative approaches to early childhood education.

Importance, need, or justification: The focus of the Austin Laboratory is stated to be intercultural education. In implementing this mission the laboratory hopes to develop methods to:

1. Alleviate the educational disadvantage of the target population in Texas and Louisiana
2. Accelerate educational change.

A major strategy of the laboratory appears to be to attempt to implement these goals through early childhood education.

Method, strategy, or design: In order to achieve their objectives and goals, SEDL has implemented a decentralized development organization. Each center or site is responsible for developing its own curriculum. A monthly planning conference is held in Austin with all of the centers attending. In general, the development of curriculum in each center is expected to follow a gross general outline including three steps:

1. The design of the curriculum including the design pilot testing
2. Pilot testing which would entail whole system or portion of system testing
3. Field testing of the curriculum.

Characteristics of the sample:

The ethnic characteristics of the sample differ from center to center. In general, however, the population could be described as lower SES, culturally disadvantaged, etc.

Characteristics of the users:

The users are presumed to be all persons working with preschool age children in an educational setting.

Expected end products:

Expected end products include:

1. Several different curricula for working with young children
2. Staff development packages to accompany these curricula
3. Some parental involvement packages
4. Research reports and evaluations concerning the efficacy of these curricula with these specific target populations.

Evaluation procedures:

Part A: Formative Evaluation. Formative evaluation is largely left in the hands of the individual centers with some consultation from the central staff at Austin.

Part B: Summative Evaluation. Summative evaluation is handled by the central staff at Austin with the data being collected by the center people according to a predetermined schedule.

Part C: Program Evaluation. Program evaluation at SEDL in regard to the early childhood education component appears to be in flux at present due to at least in part to two factors:

1. There is no permanent director of the early childhood education component

Evaluation procedures (Continued):

2. The organizational structure of the laboratory is in the process of shifting somewhat at the present time.

A decision group is composed of people who have major responsibilities for the various components. Program decisions are:

1. Data based

2. Criteria for these decisions have been set up by the people who have major responsibility for the programs.

No other information concerning actual program evaluation was available.

Relationships to other projects:

The Early Childhood Education component centers have various relationships with other groups, agencies, etc. in their own individual communities. In addition, the early childhood education component in general has recently worked out a liaison relationship with an Arkansas group composed of Dr. Walter Hodges of the Arkansas Center for Staff Development in Early Childhood Education and other groups and persons related to that center. SEDL is also in the process of exploring ways and means of cooperating with early childhood components of other regional laboratories.

Southwest Educational Development Laboratory (SEDL)

Title: Fort Worth Central Cities Educational Development Center

Principal staff:

- Mr. John Barnett, Director
- Mrs. Anne Brannon, Assistant Director, Head of Curriculum Development Component, Head of Staff Development Component
  - * Mrs. Maxine Kamenitsa, Curriculum Writer in Motor Skills
  - Mrs. Vivian Hicks, Curriculum Writer in Language
  - Mrs. Inez Carroll, Curriculum Writer in Social Education
  - Mrs. Reva Bell, Curriculum Writer in Social Education
  - * Mrs. Flora B. Cox, Staff Development Specialist
  - Mrs. Alma D. Bruton, Staff Development Specialist
  - Mrs. Mary E. Houghton, Staff Development Specialist
- * Mr. Charles L. Evans, Research Manager
- Mr. Leon C. Ray, Coordinator of Parental Involvement Component

Purpose, objective, or goals: To write a curriculum based on behavioral objectives for children ages 2 through 8 in the areas of social education and language arts with special reference to the target population in the Central Cities project area with accompanying staff development and home involvement packages. The major focus during the current 1968-69 year (which is the first year of operation for the Central Cities Project) is on two, three, and four-year-olds and their teachers and parents.

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* Personnel on SEDL payroll; all others on Fort Worth Public Schools payroll.

Method, strategy, or design:

The curriculum writers work from a base containing at least three elements:

1. The Scope and Sequence which is, in essence, a review of the literature in regard to age norm experience for developmental tasks in cognitive, affective, and psychomotor areas;

2. Test results on the Fort Worth Central Cities Population showing revised age norm expectations on developmental tasks in these three areas;

3. Observation by the curriculum writers in the classroom.

From this base the curriculum writer develops a lesson which begins with a single behavioral objective and which has input from the teachers, a parent group, and others. This lesson is then taught, critiqued, and evaluated and perhaps retaught and reevaluated before becoming a part of the curriculum. In addition, the curriculum as a whole is reviewed periodically and individual lessons may be resequenced.

The staff development and the parental involvement components as well as the research and development component are designed to mesh with and feed into the curriculum development component. The staff development component is service oriented and is focused on:

- a. the center personnel
- b. first grade teachers of the Fort Worth public schools located within the target area.

Method, strategy, or design (Continued):

Staff development activities at the center level are designed to provide the teachers with skills which will enable them to utilize the curriculum being developed at Central Cities in the most effective manner.

The parental involvement component is also designed to provide input into the curriculum as well as give service to parents. Several home visitors are provided by the local Community Action Agency as this portion of the original Central Cities proposed budget was cut. These home visitors apparently provide social work type services to the parents, and serve as the liaison link between Central Cities and the home. The parents attend regular meetings during the conceptualization process of the curriculum in order to provide input from the home to the curriculum. They also observe periodically in the classrooms and help with the making of materials in an attempt to extend the learning into the home.

A third activity which is in planning and may conceivably be included in the home involvement component or may become a separate component is the initiation of a team which would work in the home. This team would include a special educator, a speech person, a home-school counselor and others. The team would determine what "information" was carried from the school into the home and might even write a curriculum to be used in the home.

Characteristics of the sample:

The Central Cities project sample is composed of 192 lower SES children

Characteristics of the sample (Continued):

divided into ten classes which originally included 20 children each. Two children are Caucasion, 12 children are Mexican-American, and 178 children are Negro. They are apportioned by class in the following manner: one class of two-year-olds, four classes of three-year-olds, four classes of four-year-olds, and one class of five-year-olds.

A second facility is operated at another site nearby as a part of the Central Cities Project which works with Mexican-Americans only and has one class each of three, four, and five-year-olds.

Characteristics of the users:

The users are presumed to be all persons working with preschool age children in an educational setting.

Expected end products:

Expected end products include:

1. A curriculum for children ages 2 through 8
2. A staff development package to accompany this curriculum
3. A parental involvement package to accompany this curriculum
4. Research reports and evaluations concerning the efficacy of this curriculum with this specific target population.

Evaluation procedures:

Part A: Summative Evaluation. The basic evaluation procedure is a pre-post-test type of design. The general evaluation plan, developed jointly by Fort Worth and SEDL staff, includes following all children in the development

Evaluation procedures (Continued):

of language, and other cognitive skills, physical development, psycho-social development, general health, and school attendance. The Slosson Intelligence Test, the Preschool Attainment Record (PAR), and the Behavior Check List are given to all children. The Leiter International Performance Scale, the Peabody Picture Vocabulary Test, the Caldwell Preschool Inventory, the Stanford Binet Scale and the Illinois Test of Psycholinguistics Ability are given on a sampling basis.

Evaluation of the staff development and home involvement components is to be done using:

a. observations in the classroom
b. video tapes on a random sample to teachers
c. paper and pencil tests such as the Minnesota Teacher Attitude Inventory, and a locally devised test concerning characteristics of culturally deprived pupils
d. a home interview
e. tests focusing on parent-child relationships and parent competence.

Part B: Formative Evaluation. A formative evaluation of each lesson is done according to the following outline:

a. the teacher tests the children at the end of each lesson to see whether or not they have achieved the behavioral objective of that lesson

b. the teacher writes a written evaluation of the lesson

Evaluation procedures (Continued):

c. the teacher evaluates the lesson orally with the curriculum writer who wrote the lesson

d. the staff evaluates the lesson subjectively on the basis of all the foregoing data at a staff meeting

e. the research manager tests a random sample of the children who were taught this lesson to see whether they have attained the behavioral objectives.

If 75% of the children have attained the behavioral objective on the teacher's test and the research manager's test and if the staff evaluates the lesson positively, it is considered a "successful lesson" and included in the curriculum.

Part C: Program Evaluation. Program evaluation is done through decisions made by the Project Management Committee which includes:

1. Officials of the Fort Worth Public Schools
2. Personnel from SEDL
3. Other key people.

The committee meets monthly to consider a progress report and make planning decisions for program. Mr. Barnett serves as executive secretary to this group. They receive systematic input from an in-house staff committee which meets regularly to make recommendations which are channeled through Mr. Barnett to the Project Management Committee. This in-house staff committee includes the heads of all the various components.

Evaluation procedures (Continued):	The actual decision making process of the Project Management Committee seems to be implicit rather than explicit.
Relationships to other projects:	Central Cities Educational Development Center is operated as a Fort Worth Public School. The Southwest Educational Development Laboratory at Austin provides significant input into the project by contractural arrangement. All of the research and evaluation component is from SEDL as well as significant portions of the curriculum development component and the staff development component. Approximately 25% of the support of the Central Cities project is provided by SEDL. Direct line functions of the project, however, remain with the Fort Worth public school through Mr. Barnett who serves as the project director and with SEDL functioning in a liaison or consultative relationship by contract. Central Cities maintains liaison relationships with several other groups for various reasons such as: The Fort Worth Community Action Agency, the Texas Education Agency, and the University of Texas.

Southwest Educational Development Laboratory (SEDL)

Title:	The Good Samaritan Center
Principal staff:	* Mrs. Sheri Nedler, Curriculum Coordinator * Mrs. Niki Blankenship, Curriculum Writer * Mrs. Joyce Coleman, Curriculum Writer * Mrs. Peggy Sebera, Evaluation Staff Mrs. Connie Swander, Center Director
Purpose, objective, or goals:	To write a curriculum which will make three-year-old Spanish speaking children functioning bilinguals by the time they enter first grade at age six. The focus during the current year has been on three and four-year-old children.
Importance, need, or justification:	The Spanish speaking child in the Texas and Southwest culture typically has a very difficult time in school which is thought to be related to his inability to function effectively in English as well as Spanish. There are few, if any, curricula, techniques, methods, etc. focused specifically on this problem. The Good Samaritan Project is attempting to address itself to this need.
Method, strategy, or design:	The work at the Good Samaritan Center has an interesting history having been in progress for a number of years prior to being brought under SEDL auspices. Work with young children at the center has been progressing for some 18 years in one form or another. In 1965, however, the center received an NIMH grant for the specific development

*** Personnel on SEDL payrool; all others on Good Samaritan Center payroll.**

Method, strategy, or design (Continued):

of a preschool program. Since that time, the curriculum approach to be used with this target population has been through a very interesting series of developmental stages and has evolved into its current status. In the past, a series of methodologies have been tried out including several homemade ones as well as the Bereiter-Engleman approach and none of these have been found to be maximumly effective with this target population. The Marion Blank techniques are currently being used to implement the curriculum goals.

At the present time, the Good Samaritan Curriculum staff hopes to write lessons which will make functioning bilinguals of young children by the time they are six years of age by phasing the child into English in the following manner: At three the child's instruction is mostly in Spanish, at four English is phased into the instruction until it becomes predominant by about January, at five the child's instruction is largely in English. The goal of the curriculum is to first make the child competent in his own primary language, Spanish, and then give him competence in a second language, English. Curriculum lessons are written in five major areas:

1. Visual training
2. Auditory training
3. Motor training
4. English-Spanish language instruction
5. Expanded language activities (i.e., problem solving)

Although some quantitative skills are used in the last area, the staff is currently considering adding specific quantitative tasks to the curriculum next year.

Method, strategy, or design (Continued):

The lessons are written by the curriculum writers following input from a number of different and varied sources including the teachers, the curriculum writers own experience, and others. The lessons are taught, critiqued, and evaluated and perhaps retaught before becoming a part of the curriculum. The current focus appears to be upon a task analysis type of approach in order to

1. Specify skills
2. Develop screening tests
3. Then write a sequence of activities directed toward producing these skills

The project thus far has focused primarily on the child who comes to the school. The center is currently in process, however, of developing a home visitor program which is expected to be implemented during the 1969-70 year.

Characteristics of the sample:

The Good Samaritan Center sample is composed of 46 children divided into three classes of approximately 15 each of three-year-olds, four-year-olds, and five-year-olds. Half are male and half female. All are lower SES and all enter the project at age 3 with Spanish as their only language. The sample was randomly selected from the Good Samaritan target area following a house-to-house survey.

Characteristics of the users:

The users are presumed to be all persons working with preschool age Spanish speaking children in an educational setting.

Expected end product:

The expected end product include:

1. A curriculum for Spanish speaking children ages 3 through 5

Expected end product (Continued):

2. A staff development package to accompany this curriculum, and
3. Research reports and evaluations concerning the efficacy of this curriculum with this specific target population.

Evaluation procedures:

Part A: Summative Evaluation. The basic evaluation design is a pre-post-test one and will utilize the following measures, techniques, methods, etc.: Leiter International Performance Scale, Peabody Picture Vocabulary Test, (Spanish and English), Preschool Attainment Record, Caldwell Preschool Inventory, The Frostig, a Language Evaluation Test (Good Samaritan-made), Behavior Check List, Class Rosters, Attendance Records, health records. The staff development component will utilize a teacher demographic questionnaire and the Minnesota Teacher Attitude Inventory in its evaluation.

Part B: Formative Evaluation. The formative evaluation thus far has been a somewhat informal series of feedback loops with a 75% criterion being required on the achievement of the behavioral objective of each lesson. In addition, evaluation sessions are held with the curriculum writers and the teachers at which the lesson and its test data as well as many other factors are reviewed and some decision made as to the lesson. The formative evaluation procedures are in the process of being reviewed in cooperation with SEDL.

Part C: Program Evaluation. Program decisions relative to the curriculum and its development seem to be made by Sheri Nedler following input from other

Evaluation procedures (Continued):

members of the staff. Decisions concerning fiscal and operational management of the center are made by Mrs. Swander who is the Good Samaritan Center Director.

Relationships to other projects:

The Early Childhood Education Curriculum Development Component of the Good Samaritan Center in San Antonio is operated as a regular part of the Good Samaritan Center's total program as a community center, but is supported in the majority by the Southwest Educational Development Laboratory.

Once a week, Niki Blankenship does a TV show called "Los Ninos" for the local TV station which is coordinated with the Good Samaritan Curriculum. The home liaison person works actively in community action projects in the community and maintains liaison for Good Samaritan in these projects in this manner. If the San Antonio Model Cities proposal currently under consideration is funded, Good Samaritan expects to implement a pilot test of their curriculum in local public school kindergartens through these monies.

Southwest Educational Development Laboratory (SEDL)

McAllen Pilot Test Center

No detailed information available concerning this site.

The following taken from PPBR of December 1, 1968: "Three classes each of three-year-old and four-year-old migrant Mexican-American children will pilot test an early childhood education program designed specifically for this target group. Each class will be composed of 15 children. The Laboratory's Director of Early Childhood Education Program and the Curriculum Development Personnel based in Austin will develop the instructional program to be pilot tested in McAllen. These materials will be refined in cooperation with pilot test personnel."

Southwest Educational Development Laboratory (SEDL)

Caddo and Bosier City Pilot Test Centers

No detailed information available concerning this site

The following was taken from the PPBR of December 1, 1968: "In these two pilot test centers, the instructional units of the early childhood education program will be pilot tested with five classes of children ages 3, 4, and 5 from economically deprived rural homes. The program will be refined by the curriculum development staff based in Austin and Fort Worth in cooperation with the personnel of the pilot test centers."

Southwest Regional Laboratory for Educational Research and Development (SWRL)

Title: Communication Skills Program

Principal staff: Richard Schutz, Director

Purpose, objective, or goals: To design and develop instructional materials and methods to teach children in grades K-4 to read, write, speak, and understand.

Method, strategy, or design: The SWRL strategy stems from four basic principles:

1. product orientation
2. programmatic orientation
3. user orientation
4. self-corrective orientation

The laboratory activities encompass four major functions or elements:

1. Product Design--concerned with identification and analysis of certain conceptual language skills and information processing skills which are relevant to various stages of instruction, design of specific techniques for observing their presence, and specification of procedures for teaching such skills.

2. Product Development--involves successive testing and revision until the products achieve specified instructional outcomes. Specification of these outcomes and development of methods and materials for achieving them are product development concerns.

3. Product Integration--relates to the identification of principles governing the effective use of laboratory products.

4. Resource Service--performs the laboratory's liaison, communications, and materials production functions.

Method, strategy, or design (continued)

The Communication Skills Program includes the following areas:

a. Prerequisite skills
    1. conceptual skills
    2. language skills

b. Oral language subpopulation
    3. Negro dialect
    4. Spanish speaker

c. Word attack skills
    5. Beginning reader
    6. Advanced reader

d. Comprehension skills
    7. Discourse comprehension

Expected end products:

The expected end products of this program include oral language development procedures, reading and listening books, specific lessons on isolated skills, and the teaching techniques suggested for use of the material.

Evaluation procedures:

See tables 2 and 3 following.

Southwest Regional Laboratory for Educational Research and Development (SWRL)

Title: Problem Solving Skills Program

Principal staff: Richard Schutz, Director

Purpose, objective, or goals: To classify broad problem solving skills into specific components and to develop and validate in the classroom instructional materials and procedures leading to the child's mastery of these skills. Efforts have been concentrated in instructional concept development, scientific inquiry skills, and general intellective skills.

Method, strategy, or design: The SWRL strategy stems from four basic principles:

1. product orientation
2. programmatic orientation
3. user orientation
4. self-corrective orientation

The laboratory activities encompass four major functions or elements:

1. Product Design--concerned with identification and analysis of certain conceptual language skills and information processing skills which are relevant to various stages of instruction, design of specific techniques for observing their presence, and specification of procedures for teaching such skills.

2. Product Development--involves successive testing and revision until the products achieve specified instructional outcomes. Specification of these outcomes and development of methods and materials for achieving them are product development concerns.

3. Product Integration--relates to the identification of principles governing the effective use of laboratory products.

Method, strategy, or design (continued)

4. Resource Service--performs the laboratory's liaison, communications, and materials production functions.

Emphasis of initial instructional forms is on developing the ability of children to discover rules covering three processes:

1. classification
2. change
3. ordering

A team of materials development specialists, subject matter specialists, and teachers are developing the materials and methods for teaching these skills. They will define each of the skills in terms of the component types of behavior and seek observable evidence that:

1. the behavior is common to a wide range of content areas of the primary grade level.
2. it serves as a foundation for the development of more complex skills
3. pupils who exhibit the behavior are more skillful than those who do not.

The Kindergarten Program, geared to the culturally disadvantaged, has been designed to teach children certain simple concepts such as color, size, shape, and numbers, which have been found to be essential to his later mastery of academic material.

Evaluation procedures:

See tables 2 and 3 following.

Southwest Regional Laboratory for Educational Research and Development (SWRL)

Title: Computer-Based Systems

Principal staff: Richard Schutz, Director

Purpose, objective, or goals: SWRL is concerned with producing new educational systems rather than new data processing systems. The intent is not to contribute directly to computer science per se, nor to provide a service bureau to schools; rather, it is to develop educational systems and programs that produce improved student learning.

Method, strategy, or design: The SWRL strategy stems from four basic principles:

1. product orientation
2. programmatic orientation
3. user orientation
4. self-corrective orientation

The laboratory activities encompass four major functions or elements:

1. Product Design--concerned with identification and analysis of certain conceptual language skills and information processing skills which are relevant to various stages of instruction, design of specific techniques for observing their presence, and specification of procedures for teaching such skills.

2. Product Development--involves successive testing and revision until the products achieve specified instructional outcomes. Specification of these outcomes and development of methods and materials for achieving them are product development concerns.

Method, strategy, or design (continued)

3. Product Integration--relates to the identification of principles governing the effective use of laboratory products.

4. Resource Service--performs the laboratory's liaison, communications, and materials production functions.

The laboratory has identified requirements for the computer related to the following three areas of laboratory endeavor:

1. instructional management and administrative planning systems
2. instructional product development
3. mission oriented research

The plans for each unit follow:

1. Instructional Management and Administrative Planning Systems--The laboratory has been developing an instructional management system (IMS) and a school administrating planning system (S-Plan). Each system is being developed to provide a cost-feasible, practical, user oriented means of handling important educational functions. IMS is a computer-based classroom information system designed to aid them in making instructional decisions about pacing the class, administering supplemental remedial materials, reassigning students to different ability groups and tailoring instructional assignments to individual pupils. Input-output devices in classrooms will be linked, via telephone, to a computer in a nearby district or county office.

   S-Plan provides a computer-based information system for administrative decision making. Budget planning at the district level was selected as the initial

Method, strategy, or design (continued)

data base from which to launch the empirical trials and revisions necessary to produce practical and useful planning assistance. Future work with S-Plan will take cognizance of several dimensions. These will include the following elements: instructional materials, fiscal control, pupil personnel data, instructional objectives, physical plant maintenance and physical inventory.

2. Instructional Product Development--SWRL product development activities involve several computer system applications. In contrast to traditional "computer-assisted instruction" in which the computer has total control over all aspects of learners' instruction at a given time whether in a "drill and practice" or "tutorial interactive" mode, SWRL product development strategy is to identify and treat differentially various components of instruction that can be facilitated by the computer. Among the functions that have been identified are: computer managed instruction, computer displayed instruction, computer generated instruction, and computer controlled instruction.

3. Mission Oriented Research

   a. On-line experimentation includes studies involving real time interaction between subject and equipment. The computer system permits studies in which a given equipment generated event is made contingent upon a complex sequence of outcomes or prior event occurrences. This research explores parameters relating to how

Method, strategy, or design (continued)

much and what kind of prior experience in the experimental situation must be considered to insure successful performance in the present.

b. Data reduction and analysis involves the summarization and storage of data.
c. Simulation of research.
d. Linguistic analyses.
e. Demographic analyses.
f. Economic analyses (cost utility analyses).

Evaluation procedures: See tables 2 and 3 following.

Southwest Regional Laboratory for Educational Research and Development (SWRL)

Title: Educational Research and Evaluation Procedures Compendium (Staff Training)

Principal staff: Richard Schutz, Director

Purpose, objective, or goals: This program is designed to accomplish a restricted set of objectives related to training school research and curriculum personnel.

Method, strategy, or design: The SWRL strategy stems from four basic principles:

1. product orientation
2. programmatic orientation
3. user orientation
4. self-corrective orientation

The laboratory activities encompass four major functions or elements:

1. Product Design--concerned with identification and analysis of certain conceptual language skills and information processing skills which are relevant to various stages of instruction, design of specific techniques for observing their presence, and specification of procedures for teaching such skills.

2. Product Development--involves successive testing and revision until the products achieve specified instructional outcomes. Specification of these outcomes and development of methods and materials for achieving them are product development concerns.

3. Product Integration--relates to the identification of principles governing the effective use of laboratory products.

Method, strategy, or design (continued)	4. Resource Service--performs the laboratory's liaison, communications, and materials production functions. The materials developed to date constitute self-contained instructional components including self-monitored explanations, exercises, and examinations.
Characteristics of the sample:	Children from kindergarten through fourth grade represent the sample population being served by SWRL. Subpopulations include Negros and Mexican-Americans.
Characteristics of the users:	Potential users are presumed to be educators of children from kindergarten through fourth grade.
Evaluation procedures:	See tables 2 and 3 following.
Relationship to other projects:	The linguistic analyses being conducted on Negro-American dialect and Mexican-American dialect are similar to those being performed by the Southeastern Laboratory at Atlanta.

Table 2

Considerations in Evaluating an Educational Product

1. Statement of objectives

   *What observable outcomes are anticipated?

2. Criterion measures

   *What procedures are available to measure the accomplishment of the outcomes?

3. Instructional components

   *What materials are involved?

4. Learner prerequisites

   *What initial performance must the learner exhibit?

5. Teacher requirements

   *What are the teacher's responsibilities?

6. Reliability of effect

   *What evidence is available that the product has yielded dependable results?

7. Time

   *What are the time requirements?

8. Cost

   *What direct and indirect costs are associated with the product?

9. Cost effectiveness

   *What is the relationship between the utility and the reliability of effect and the direct and indirect costs associated with the product?

Table 3

The Product Development Cycle

Development Stage	Review Base	Review Criteria	Review Outcomes
1. Formulation	a. Technical plan including: a description of components in terms of pedagogical, environmental, management, and time characteristics b. List of prerequisite skills and desired instructional outcomes, including criterion tests, or prototype item for each c. Unique development considerations d. Event schedules and personnel requirements	a. Anticipated utility b. Anticipated cost c. Feasibility of schedule d. Accessibility of required personnel	a. Go or no go decision b. Recommended modifications of proposed objectives, content, procedures, etc. (if decision is "go") c. Statement of next steps in development (e. g., revise plan and resubmit, hire specified personnel types, etc.)
2. Component Development	a. Specifications for each component in terms of pedagogical, environmental, management, and time characteristics b. Report summarizing prototype tryout of each component c. At least two sample lessons associated with each component	a. Completeness of specifications b. Consistency with formulation requirements c. Feasibility of components d. Completeness and quality of component testing e. Technical quality of prototype lessons	a. Recommended changes in components, prototype lessons, or further testing b. Statement of next steps in development

Table 3 (Continued)

Development Stage	Review Base	Review Criteria	Review Outcomes
3. Product Preparation	a. All materials for program b. Field tryout prospectus	a. Instructional and technical quality of product b. Consistency with instructional specifications and prototype components c. Adequacy of supplementary materials (including teachers' manual) d. Appropriateness of proposed tryout procedures	a. Recommended changes to be made in product or tryout procedures b. Statement of next steps in development
4. Product Tryout	a. Report summarizing tryout and presenting all evaluation data and proposed revisions in product	a. Reliability of effect as indicated by learner performance b. Manageability as indicated by performance data and observer report c. Instructional time and cost	a. Recommended revisions in methods or materials b. Recycle to preceding phase c. Prepare for installation
5. Development Analysis	a. Written summary and evaluation of the entire development cycle with the particular product	a. Instructional and technical quality of materials b. Consistency with recommended revisions c. Efficiency of procedures used in product development cycle	a. Recommended changes in revision and tryout procedures (if any) b. Statement of next steps in development (if any) c. Statement of changes to be incorporated in SWRL product development procedures

APPENDIX 10

PROGRAM SUMMARIES OF COOPERATIVE RESEARCH PROJECTS INCLUDED IN CURRENT ANALYSIS

Cooperative Research Project
Bureau of Research 5-0342

Title:	An Evaluation of the Effectiveness of an Enriched Curriculum in Overcoming the Consequences of Environmental Deprivation
Principal staff:	Martin Deutsch, Leo S. Goldstein
Purpose, objective, or goals:	To evaluate the effectiveness of an early enriched school curriculum in reversing the consequences of environmental conditions which lead to failure in school.
Importance, need, or justification:	There is considerable evidence that effects of negative background factors in the lives of young children can be reversed to some extent through early intervention at the preschool level. There is a need, however, to develop and evaluate specific curricula for preschool children.
Method, strategy, or design:	After the appropriate experimental and control samples have been selected and pretested, the experimental subjects will be trained with an enriched preschool curriculum. The immediate and long term effects of preschool enrichment will be evaluated by comparing the posttest performance of experimental and control groups on measures of cognitive function. Separate evaluation will be made of the effects of additional enrichment beyond the preschool level. The effect of delaying introduction of enrichment will be evaluated by comparing the test performance of experimental subjects with that of a comparable group of children who begin enrichment training at the kindergarten level. Pre-enrichment cognitive functioning and home environment variables will also be examined as predictors of later achievement.

Characteristics of the sample: Preschool subjects will be four-year-old children from lower income families living in over-populated slum areas of New York City.

Characteristics of the users: The users are presumed to be educators of young disadvantaged children.

Expected end products: An enrichment curriculum for disadvantaged preschool children.

Evaluation procedures: Part A: Summative Evaluation--will include both curriculum evaluation and personality and attitudinal variables, encompassing five major areas:

1. intelligence
2. language development
3. conceptual ability
4. memory and attention
5. perceptual discrimination

Both standardized and experimental measures are to be used.

Part B: Formative Evaluation--Several scales have been devised for periodic use throughout the year to provide an objective description of aspects of the teaching process and to measure the effectiveness of the techniques employed and materials used. As data are collected and interpreted, findings will be fed back to the experimental teaching staff and steps taken to improve efficiency. Instruments to be used are:

a. Teacher Observation Scale
b. Location Activity Material Inventory
c. Simulated Telephone Interview
d. A teacher's rating scale of children's behavior
e. achievement measures

Relationship to other projects: No specific information available.

Cooperative Research Project
Bureau of Research 5-0540

Title: Prekindergarten Programs for Educationally Disadvantaged Children

Principal investigator: Louis T. Di Lorenzo

ABSTRACT SUBMITTED BY PRINCIPAL INVESTIGATOR.

Objectives: The purpose of this study is to evaluate preschool programs for educationally disadvantaged children in terms of their ability to achieve the following objectives:

1. Increased capacity to learn
2. Improved social development
3. Better self-concept
4. Increased motor development
5. More positive attitudes toward school

Comparisons among several kinds of programs will be made for each of these goals in order to identify and relate treatment variables to the kinds of behavioral changes achieved.

The results with programs of varying duration (six-week-summer vs. one-year vs. more than one year and half-day vs. whole day) will be analyzed for appreciable differences. A longitudinal evaluation will be made to determine whether and under what conditions any early advantages of the experimental group persist.

Particular attention will be focused on teacher behavior and practices in successful and non-successful programs. Differences will be examined in terms of their use for teacher training.

Procedures: During a six-month pilot period, January through June, 1965, five school districts

Procedures (continued)

operated a minimum of two prekindergarten classes each. The pilot period provided opportunities for solving administrative problems, answering specific questions, observing programs, securing materials, and making needed changes before the project years.

In the spring of 1965, children were selected for the first project year, pretested, and randomly assigned to experimental (preschool) and control (no preschool) groups. At the start of the prekindergarten programs in October, 1965, the teachers will attend a six-day training institute. During the school year, the teachers and the research team for the project will meet every other Friday for inservice training, workshops, conferences, lectures, progress reports, and visitations to observe the project programs. During the project year, each teacher will be observed twice by each of two observers experienced in prekindergarten programs. The teachers and the situations will be separately ranked and described by the observers.

At the close of the first project year, some experimental and some control children will be assigned to mixed kindergarten classes; others will be assigned to separate experimental or control classes. All experimental and control children will be tested early in the kindergarten year and annually thereafter for the course of the project.

In the spring of 1966 and again in 1967, additional children will be selected and pretested for replications of the first-year treatments and follow-up. The first year project children will be followed through second grade, the second-year children through first grade, and the third year children through kindergarten.

Cooperative Research Project
Bureau of Research 5-0590

Title: Effects of Preschool Stimulation Upon Subsequent School Performance Among the Culturally Disadvantaged

Principal Investigator: Walter T. Plant

Purpose, objective, or goals: The primary purpose of the proposed project is to determine the long term effects of a preschool training program upon the academic achievement and personal adjustment of culturally disadvantaged children of Mexican-American ethnic background. The project will yield data to determine the practical feasibility of such preschool training programs for district level support.

Importance, need, or justification: A substantial body of anthropological, educational, psychological and sociological research results now clearly indicates that the culturally disadvantaged child enters school with significant handicaps to school achievement. These handicaps seem to be of two major interrelated dimensions: cognitive and attitudinal. The evidence is clear that the handicaps to school achievement persist and are not confined to the start of school only. The long term social consequences of the persistence of these school achievement handicaps are seen in successive generations of culturally disadvantaged persons achieving markedly less in school both in terms of quality and amount, entering the labor market with fewer relevant skills, and seldom approaching full personal development as compared with the non-disadvantaged.

Method, strategy, or design: The proposed longitudinal study is of the academic skill and attitude development of samples of lower socioeconomic Mexican-American children treated differentially.

Method, strategy, or design (continued)	The study is longitudinal in order to determine the school performance effects of a complex preschool intervention program geared toward substantially increasing relevant skill and attitude levels. Groups of similar subjects need to be treated differentially in order to determine the efficacy of the training program. The proposed design provides for four experimental (or "treated") groups and three types of comparison (or "untreated") groups. The composition of the several groups will be similar in terms of ethnic and social-class family background. The training program will consist of two consecutive summer periods of ten weeks each with monthly sessions between the two summer sessions. The specific program content is composed of tested activities to be undertaken in small groups, and the activities are known to be related to intellectual and attitudinal development in culturally disadvantaged children. The program provides for maximum interaction between the children and achieving role models. The school district wherein the children reside will provide the physical facilities, transportation means and some professional staff time for the training program.
Characteristics of the sample:	The sample will consist of preschool age children of Mexican-American background who have been classified as lower socioeconomic status on several different criteria.
Characteristics of the users:	The users are presumed to be educators of young disadvantaged children.
Expected end products:	End products are presumed to be a tested preschool training program affecting the academic achievement and personal adjustment of culturally disadvantaged children of Mexican-American ethnic background.

Evaluation procedures:

Part A: Summative Evaluation--Instruments to assess the growth in the cognitive areas will include the Stanford Binet, the French Pictorial Test of Intelligence, the Wechsler Preschool and Primary Scale of Intelligence, and others. In the attitude development area, a Q-Sort technique for scholastic motivation, the book motivation scale, observational data, and tape recordings will be collected.

Part B: Formative Evaluation--No details were available concerning this section.

Part C: Program Evaluation--No details were available concerning this section.

Relationship to other projects:

No information was available concerning this section.

Cooperative Research Project
Bureau of Research 6-1341

Title: The Interaction of the Adult and the Child in the Preschool Setting

Principal Investigators: Alfred Baldwin, Clara Baldwin

ABSTRACT SUBMITTED BY PRINCIPAL INVESTIGATORS.

Objectives: The objectives of this program of studies are as follows:

1. To devise a methodology for the collection and analysis of data on adult-child interactions in naturalistic situations.
2. To devise a standardized behavioral language that will permit the systematic description and analysis of behavior.
3. To devise a form for systematically yet concretely describing an educational or socialization setting.
4. To compare and contrast adult-child interactions in a variety of settings, and with children of different ages and social background.
5. Experimental studies of selected aspects of interaction both in naturalistic and laboratory settings.

Procedures:

1. The investigators have already obtained tape recordings of adult-child interactions in a variety of settings by means of a portable transmitter whose signal is picked up by a radio received and fed to a tape recorder.
2. The investigators have developed a preliminary draft of a behavioral language. This is a form of English with a standardized vocabulary and a standardized grammar that is completely unambiguous. The language will in principle permit a person to make any kind of a statement

Procedures (continued)

that would be possible in ordinary English, but there is only one way in which any particular kind of interaction can be described.

3. The use of this behavioral language for data reduction will permit a computerized content analysis of the collected data.

4. From the records of interaction specific behavioral acts will be selected for further study. These acts are ones that presumably help the child extract information from the environment. Any particular variable will be investigated to:

    a. show its effectiveness in getting information
    b. show its relation to other child and adult behavioral variables
    c. determine its modifiability under manipulation of adult behavior in naturalistic and laboratory situations.

Cooperative Research Project
Bureau of Research 6-2771

Title:	The Natural History of the Education of the Deprived Negro Child in School, Family and Peer Cultures
Principal staff:	Dr. Helen Gouldner, Dr. John Bennett, Mrs. Carol Talbot, Mr. Ray Wrist, others
Purpose, objectives, or goals:	The purpose of the project is to study the learning experiences of selected children in home, school and peer cultures over a three year period, starting in kindergarten and going through the first grade. The objective is to concentrate on the experiences of particular children, to elucidate their lives, to account for their particular success or failure in school. We want to know why particular ghetto children succeed or fail in school.
Importance, need, or justification:	It is clear already, from the work of men like S. M. Miller and Frank Riessman, that the poor are not a homogeneous population, and that therefore neither can they be homogeneous in success or failure nor in the factors that play upon them and determine whether the children shall succeed or fail in school.
Method, strategy, or design:	We intend to write this natural history from our direct observations of young ghetto children in their natural habitat. By natural habitat we mean home, peer and school milieu. Observation will be supplemented by formal and informal interviewing. Thus, the observations are placed in the forefront of the investigation, and a great deal of reliance will be placed upon them, although interviewing, especially in the school culture, will by no means be ignored.

Method, strategy, or design (Continued)

PHASE 1

Step 1--We observe in Negro kindergartens from the first day of school. Generally an hour and a half once a week is adequate. We start with the first day because it is in the early class sessions that the teacher lays out for the children her basic modes of functioning, particularly in respect to discipline and social distance. During these early days, it may be advisable to observe more than once a week.

Step 2--We select 10 children approximating the general home conditions of a David and a Rachel.

Step 3--We concentrate observation in the classroom on those children. This kind of naturalistic observation and analysis has been reported in the publications of J. Henry.

Step 4--We establish relationships with their homes and observe their family life, during that year, when the children and the rest of the household are at home. This type of naturalistic observation and findings have been reported in Henry, 1966.

Step 5--We observe the children outside of school and home during that year.

PHASE 2--We repeat Steps 1, 3, and 5 of Phase 1 with the same children when they have entered the first grade.

PHASE 3--(To runconcurrently with Phases 1 and 2.) Study of the school culture as outlined in Section A.

Method, strategy, or design (Continued)

PHASE 4--(To run concurrently with Phases 1-3.) Study of the demographic characteristics of the population from which the children come. This includes, unemployment rates, family problems as reflected in housing and other records, number of women on ADC, disease rates, nutrition levels, etc. Much of this information will be obtained from local agencies, some will have to be created by our investigators.

PHASE 5--(To run throughout the study.) Periodic physical examinations of the children in order to take account of the effect of health factors on learning. We anticipate that these examinations will be routinely available through the school health facilities, but we make provision for a Research Associate (consultant) in the physiology of deprivation in order to integrate the data more firmly in the study.

PHASE 6--Third year. Write up.

Evaluation procedures:

Where possible and meaningful data will be analyzed statistically, but a great deal will be presented qualitatively--particularly in this pilot project where the sample will be necessarily small.

Expected outcomes:

The expected contribution to education is as follows:

1. In terms of the general problems of "Why do some fail and others succeed though they come from the same population?", we expect to provide suggestions that will account for such variance.
2. A method for the evaluation of the influences on the educational fate of slum children, of home, school and peer cultures.

Expected outcomes (continued)

3. Suggestions--and we think this may be our most important contribution--about where the educational problems of ghetto children lie. For example: How true is it, as many suggest, that the main difficulty in the education of such children in school is the disparity between cognitive experiences (narrowly construed) in home and peer cultures on the one hand and in school on the other? How true is it, as others suggest, that a main cause of failure in school is the lack of rewarding personalized experience? We expect that the natural history approach will make contributions to answering these and many other questions not obtainable by group analysis methods alone.

The materials to be produced are:

A. Research materials:

1. Protocols of observations in home, classroom and peer group
2. Interviews with members of the children's household, with the child and his peers (when possible) and with school personnel
3. Protocols of unstructured observations in classrooms. Though unstructured, the focus will be primarily on the relationships:
   a. between the teacher and the children
   b. between the teacher and the children who are subjects of the study
   c. between the subjects and their peers.

B. Final materials:

1. Qualitative descriptions of household, peer and school experiences of the subject children
2. Quantitative descriptions of the three areas of experience where possible and meaningful.

Cooperative Research Project
Bureau of Research 8-0475

Title:	Children's Television Workshop
Principal Staff:	Joan Ganz Cooney
Purpose, objective, or goals:	To promote the intellectual and cultural growth of preschoolers, particularly disadvantaged preschoolers through the medium of television.
Importance, need, or justification:	The need for preschool education is well documented by now. Yet, at present, almost half the nation's school districts do not even have kindergartens. There is a severe shortage of nursery and kindergarten teachers. The national bill for educating four-year-olds in public schools would come to an estimated $2. 75 billion. Television, used in an imaginative, educational way, may provide an immediate, practical answer.
Method, strategy, or design:	A series of daily one hour television shows will be developed, produced, and aired to provide educational stimulation for young children, specifically, young disadvantaged children, throughout the United States. These programs will be developed in co-operation with teams of psychologists and educators and teams of professional television production staff.
Characteristics of the sample:	The sample will include all young children in the United States who watch television.
Characteristics of the users:	The users are presumed to be all persons wishing to implement an educational stimulation program through the use of television.
Expected end products:	End products are presumed to be a large number of television programs designed to provide education stimulation as well as the research and development data to support these.

Evaluation procedures:	Part A: Summative Evaluation--Summative evaluation has been subcontracted to the Educational Testing Service of Princeton, New Jersey, following a design yet to be determined, but one which will probably emphasize "typical" conditions of broadcast viewing, the evaluation of a long term gain, and the use of standardized instruments. Part B: Formative Evaluation--Formative evaluation has been massive and continuous throughout the development of the television programs. It has included developing the programs, showing these to small samples of children, and testing the children on a number of variables, including memory for concepts, learning of concepts, and distractibility during watching, as well as many others.
Program evaluation:	The details concerning program evaluation were not available.
Relationship to other projects:	Details concerning this section were not available. Various members of the CTW Staff serve as consultants to the Appalachia Educational Laboratory's Project which is also a presentation of educational stimulation through TV. It is expected that many liaison relationships have developed between CTW and other organizations.

Cooperative Research Project
Bureau of Research 5-0215

Title: Center for the Study of Individual and Cultural Differences in Education

Principal staff: John D. Herzog, Director; Theodore Sizer, Robert H. Anderson, John B. Carroll, Gerald S. Lesser, Donald W. Oliver

Purpose, objectives, or goals: To conduct a long-term cooperative program of investigation into the wide range of critical psychological, social, cultural, ethnic, and other differences among individuals as they affect the learning process; to develop means by which schools can be more responsive to these differences and use them for the benefit of the individuals they serve; and to translate this knowledge and these means more speedily into educational policy and practice.

More immediate objectives of the Center are to identify, investigate, and understand critical psychological, social, cultural, ethnic and other differences among individuals and the complex patterns of interaction among these differences as they affect human learning; to develop means by which schools can take account of these differences and use them to the maximum benefit of the individuals they serve; to translate these means quickly and effectively into educational practice.

ABSTRACT OF ACTIVITIES SUBMITTED BY PRINCIPAL INVESTIGATOR.

Activities: The Center would:

1. Perform basic and applied research on learning in relation to such factors as cognitive ability, personality development, motivation, self-concept, and social grouping in a variety of cultural, social, ethnic, and racial settings

Activities (continued)

2. Adapt, develop, and evaluate curricula, training methods and materials, guidance practices, school organization patterns, and training programs appropriate to individuals of diverse characteristics

3. Conduct planning studies which will enable educational and political leaders to anticipate and provide better for the needs of growing, varied, and mobile populations

4. Disseminate the results of the above activities to all appropriate individuals and groups using a variety of methods and media, with emphasis on the role of the educational change agent

5. Provide for constant feedback and interaction with the field, and for systematic evaluation of the Center's activities

Cooperative Research Project
Bureau of Research 6-1328

Title: The Effects of Prekindergarten Training in Language and Logical Thinking on Subsequent Intellectual Development

Principal Investigator: James M. Dunlap

Purpose, Objective, or goals: The central purpose of this proposed study is to develop and evaluate an integrated program designed to promote intellectual growth of children at the critical age of four to five.

Specifically, the proposal seeks to explore the significance of a prekindergarten year by:

1. Developing an integrated program using a new combination of materials, methods, and techniques to foster sequential language development and logical thinking in a prekindergarten year.
2. Analyzing children's growth and development by a new combination of instruments beginning at age four and following through the first primary year.

Importance, need, or justification: Not all children receive optimal education in the traditional school program. Genetic and environmental variations among children result in differences in needs and in the ways they learn which ultimately determine to a large extent their potential for development.

In the traditional school setting some children experience learning difficulties almost from the day they enter school, while other children are ready to learn at a high level long before the school curriculum provides this opportunity. Children are often identified in retrospect after the damage has been done, when remediation and program modification are less effective than prevention would have been.

Techniques are needed to analyze the development of young children earlier than the normal school entrance age and to guide them into school programs with activities at a range of levels designed to trigger the growth of children's mental processes.

Method, strategy, or design:

The proposed program would extend over a five year span beginning in February 1966 and continuing to February 1971. An experimental prekindergarten program would be added to the kindergarten through twelfth grade public school program of University City, in two phases. In Phase I a prekindergarten would be established in September 1966, and follow-up evaluation of one experimental group and two control groups of children would continue through kindergarten and the first primary year, terminating in June 1969. Phase II would follow the same pattern beginning one year later to provide the advantage of replication with improved techniques when appropriate.

In the prekindergarten, children would be placed in groups according to their levels of growth and development as assessed by the Gesell Developmental Tests, Piaget tests, and Stanford-Binet Scale.

The program would include two chief focuses:

1. Piaget-type activities would begin with pre-conceptual and concrete operations and would lay the foundation for abstract or logical thinking.

These would include activities dealing with logic, matter, space, number, and seriation and would include early beginnings in science, mathematics, and social studies.

2. Sequential language development activities (speaking, listening, reading, writing) would begin with sound and symbol exercises which lead into the use of the Initial Teaching Alphabet for beginning reading and creative writing with transfer later into traditional orthography. Exercises to develop auditory and visual perception would be used. Activities in art, music, rhythm, children's literature and drama would be incorporated as opportunities for creative expression.

Characteristics of the sample: The sample is expected to include a longitudinal group beginning in their prekindergarten year and drawn from the normal public school population. This sample will be followed over a five year span.

Characteristics of the users: Users are presumed to include all persons doing educational work with young children.

Expected end products: End products are expected to include an evaluated, tested, integrated program designed to promote intellectual growth of children at the critical age of four to five, and the longitudinal evaluation follow-up-data.

Evaluation procedures: Part A: Summative Evaluation--Tests used in the post-testing phase are to include the Gessell Developmental Examination, some Piaget test to measure growth and logical thinking, and the Stanford Binet, Form LM. In the kindergarten and first year follow-up, such tests will be used as the Metropolitan Readiness Test, California

Achievement Test, Gates Primary Reading Test, and the California Short Form Test of Mental Maturity.

Part B: Details concerning formative evaluation were not clear.

Part C: Program evaluation details concerning program evaluation were not clear.

Relationship to other projects: No specific information was available here.

Cooperative Research Project
Bureau of Research 5-0701

Title: Instruction of Socioeconomically Handicapped Preschool Children in the use of Language to Increase Academic Aptitude

Principal Investigators: Evan R. Keislar, Carolyn Stern

ABSTRACT SUBMITTED BY PRINCIPAL INVESTIGATOR.

Objectives:

1. To determine the principles of language instruction which will increase the ability of socioeconomically handicapped children to use language
2. To test the hypothesis that special instruction in the use of language with such children will result in improved language ability and more rapid academic progress during the first year of school
3. To discover the best ways of developing and using programmed instruction with language-handicapped young children

Procedure: Children three to five years of age from various day care centers in Los Angeles County will be the subjects for this series of investigations. A number of subsidiary studies will be carried out to test different principles of instruction in the use of language. Generally speaking, these experimental investigations will involve two groups of culturally-deprived children, each being instructed in a different way; appropriate control groups of socioeconomically handicapped and middle class children will also be used.

Based on the results of these subsidiary investigations, a major three-year experiment involving a total of 400 children will be carried out. Experimental groups will be given

Procedure (Continued)

comprehensive training using programmed learning methods which require oral and manipulation responses from the subjects.

Evaluation procedures:

Measures will be used as criteria for the major experiment will include:

1. the ability to understand instructions, questions, and information presented orally
2. ability to speak sentences (to describe situations presented visually) involving different linguistic forms and vocabulary
3. to use language effectively in logical thinking (i.e., to use language to cue oneself appropriately in both overt and covert fashion)

The most important criteria will include academic progress during the first grade.

Time schedule:

Project to begin June 1, 1965 and end May 31, 1970, involving a total of 60 months.

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